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Railway World

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Important Developments in the Transportation Field

RETROSPECT AND PROSPECT

As a whole the railways of the country are glad that 1913 is now well behind them and that many of the problems which so sorely perplexed them during the past twelve months are in a fair way to a satisfactory solution. This does not mean that the immediate future is necessarily bright with promise, but railway officials are naturally optimistic by nature and with slight encouragement are ready to throw tremendous efforts into the up-building of their business. Recently this encouragement appears at least to be in view, and while as yet, has assumed no definite form, it is hoped and believed by a majority of railway managers, that the Government is at least seriously contemplating the necessity of coming to their assistance by permitting such a readjustment of their freight rates as will enable them to carry out their plans for more and better railways.

Among the developments of the year which may be briefly mentioned, was first, the Federal Supreme Court's decision in the Minnesota rate cases which compelled a number of Western roads to put in operation both freight and passenger rates which they claimed to be of an unremunerative character. In other words, the decision resulted in the railroads operating in Minnesota, changing from a three-cent to a two-cent basis per mile of instrastate passenger fares and reducing intrastate freight rates in certain instances twenty-five per cent. In the West Virginia passenger rate cases, the Supreme Court also ruled that the railroads of that state must abide by the provisions of the two-cent fare law passed by the state legislature.

Another development of unusual importance was the passage of the physical valuation bill which places upon the shoulders of the Interstate Commerce Commission, the responsibility for making a physical valuation of the railroads of the United States. For this purpose the country has been divided up into five districts and the work put under the supervision of Charles A. Prouty, who has resigned from the Interstate Commerce Commission to direct it.

A third development was the decision of the Interstate Commerce Commission reducing the rates of express companies and affecting their total income to an estimated amount of $26,000,000 a year. This decision also naturally affected the income of the carriers, as well as did the establishment of the parcel post, which has so far necessitated the carriers transporting hundreds of tons of parcel post matter for which up to the present time, they have received no proper compensation, the five per cent increase in railway mail pay being entirely inadequate to pay for this service.

Labor developments have played an important part in the year's railway history, and railway labor under arbitration proceedings have been able to procure important and very general increase in their wages. One of the important questions for future settlement, is the development of some definite plan upon which future increases shall be based, as under existing methods, the men are at liberty to demand increases ad libitum. As all settlements up to the present time show, arbitration has resulted in a compromise always favorable to the men.

One of the particularly unfortunate developments of the year was the impeachment by the United States Senate and final conviction, of Judge Robert W. Archbald of the Federal Commerce Court. This served, although unreasonably, to intensify the opposition of that court and finally resulted in its abolition. A real and useful function in railway regulation, has, however, been destroyed by the discontinuance of this court and it is generally hoped not only among railway officials, but among shippers and others who have come to appreciate the necessity of such a body, that Congress will sooner or later pass supplemental legislation which will permit the establishment of an other court along somewhat similar lines.

The New England railway situation held the center of the stage of railway activities for a number of months during the latter part of the year owing to the storm of public criticism which developed towards railway operations in that section of the country. This finally led to the resignation of President Charles S. Mellen and the appointment of Howard Elliott to head the New Haven system. Since Mr. Elliott has taken control, the situation has steadily and rapidly improved and friendly relations are being established, not only with the people of New England, but with the National and State Governments who up to within recently, have been threatening dire consequences unless some very considerable change of policy was put into effect. Mr. Elliott has attacked the tremendous problems which face him, in his usual vigorous manner, and is fast winning the esteem and confidence of all those with whom he comes in contact. It is confidently predicted that the end of another year will find the New Haven firmly established in the good graces of the people of New England.

The year witnessed many important changes in the personnel of railway management. As previously mentioned, Howard Elliott left the Great Northern to become president and later chairman of the Board of Directors of the New Haven. This led to the election of W. P. Clough as chairman of the Board of Directors of the Great Northern, and of J. M. Hannaford as president of the same company. Another Western change of importance was the election of Mr. T. M. Schumacher as chairman of the Board of Directors of the Chicago, Rock Island and Pacific and as also chairman of the Executive Committee of the same road, succeeding D. G. Reed and W. H. Moore, respectively. Another change of importance was caused by the receivership of the St. Louis and San Francisco and the Chicago and Eastern Illinois roads, which resulted in the resignation of B. L. Winchell as president and his appointment as one of the receivers. Later he resigned as receiver to become director of traffiic of the Union Pacific system. In the East, William C. Brown resigned the presidency of the New York Central Lines to be succeeded by A. H. Smith, who, at the time of Mr. Brown's resignation, was senior vice-president of the system.

The year was also unusual on account of the number of deaths which occurred among prominent officials. Roswell Miller, chairman of the Board of Directors of the Chicago, Milwaukee and St. Paul died in New York on January third. On March 28th James McCrea, who, on the first of the year had resigned as president of the Pennsylvania Railroad, died at Haverford, Pa. On November 20th John H. Marble, a member of the Interstate Commerce Commission, died in Washington, and November 25th witnessed the death of both W. W. Finley, president of the Southern Ranlway, and T. M. Emerson, president of the Atlantic Coast Line. A full list of these deaths will be found in another section of this issue.

Railway construction during 1913 was far from satisfactory. While it did not essentially differ from the two previous years, it was not of the size or character which a country still young in commercial and industrial possibilities, should command. The total in round figures was 3,000 miles. The states receiving the largest amount of new mileage being, in the order given, Montana, Texas, Washington, California, North Dakota and Arkansas. Only twelve states in the Union showed new construction of more than one hundred miles. Of the roads responsible for this new construction, the Chicago, Milwaukee and St. Paul led with a total of 150 miles.

From a financial point of view, the year also proved unsuccessful. While gross earnings held up fairly well until near the end, net earnings began to show a dangerous tendency before the year was half over, and for the past six months results have been such as to cause grave concern among those in charge. Everything seems to have operated together during 1913 to bring about unsatisfactory financial conditions. Increased taxes, expensive regulation, higher wages, costlier supplies, unusually heavy damages from wrecks and floods, have all added to the carriers' burdens and have made the year one long to be remembered as one of unusually unfavorable developments.

It is not to be wondered at that such conditions have had their effect upon the railway security market and the amount of new securities placed during the year has been unusually small. Conditions have been so highly unsatisfactory, that many important roads have suspended entirely their efforts to procure new capital until the market becomes more favorable. At the present rate of earnings, rates for new money are practically prohibitive and it looks as if the investment of new capital in railway enterprises must practically cease unless the Interstate Commerce Commission sees fit to grant relief by permitting the necessary increase in freight rates.

The record of receiverships does not adequately express the condition which has been confronting many important lines during the past few months. While comparatively small, many roads have managed to drag along with the hope that the near future will bring about a change which will make unnecessary a resort to drastic measures. During the year the railroad receiverships numbered seventeen, representing a funded debt of $386,000,000, and total stock capitalization of $92,000,000.

So far as new equipment is concerned, the roads ordered more liberally during 1913 than during the preceding year, the total of freight cars built and ordered being nearly 208,000 and of passenger cars, considerably over 3,000. The total number of freight cars was the largest number built and ordered in the past fifteen years with the exception of the years 1906 and 1907. The locomotive orders for 1913 amounted to approximately 3,500, being one thousand under the orders placed during 1912.

BIG BUSINESS AND THE GOVERNMENT

There have been a number of encouraging developments recently which have led to the belief that the methods of conducting large business enterprises may be voluntarily readjusted in harmony with the Sherman antitrust law without the necessity of suits being brought by the United States Government.

For a while it looked as if extensive suits would be brought against the American Telephone and Telegraph Company, and in fact, feeling ran so high that there was talk in official circles at Washington, of government ownership of telephone and telegraph lines, as the only way to meet the difficulty. Such a plan has received the active support of Postmaster General Burleson, whose annual report contains a sweeping declaration in favor of the principles of government ownership of telephone and telegraph lines.

In discussing the probable action on the part of Congress along the lines of the Postmaster General's recommendations, ex-Senator Bourne, who was for six years a member of the Senate Postoffice Committee and the chairman of that committee for two years, has issued a public statement in opposition to the proposal. He says:

"I have not a dollar's interest in any telephone or telegraph securities. I am theoretically in favor of Government ownership of telegraph and telephone lines, but practically bitterly opposed to it. Why, because to my mind, it would be the beginning of Government ownership of national public utilities, eventuating in bureaucratic paternalism, dry rot, and inside of a century, governmental dissolution. I submit the following figures:

EX-SENATOR BOURNE OF IDAHO.

Who deprecates the tendency displayed in some Government quarters towards government ownership of public utilities, such as the telephone and telegraph lines.

Number of—

1911—Government civil employees	410,332
1912—Telephone employes	221,000
1912—Telegraph employes	40,000
1911—Railway employes	1,669,000
1909—Electric employes	209,729
1006—Water transportation	188,000
1907—Express companies	79,284
Total	2,818,345

"Under Government ownership and operation, there would be soon over 3,000,000 Governmental employes.

"'Taking into consideration the fact in the last ten Presidential elections, the President has elected by a plurality varying from 7,000 plus to a little over 2,500,000, the thought naturally arises that three million Governmental employes could absolutely control the Government under our political machinery, the tendency being more pay, less service in Governmental employment, resulting in resistless efforts of the outside labor to secure Government employ, because less onerous and more remunerative, with accumulative dissatisfaction and irritation in all private enterprises.

"Two years ago in the parcel post study it developed that the express companies had about 85,000 employes receiving an average wage scale of less than $50 per month, while the postal employes performing a similar service received an average of $93 per month, demonstrating that under Government ownership and operation of express companies the wage scale would cost the Government, conservatively speaking, thirty million dollars more for operation in labor payments than it did the express companies.

"Governmental efficiency and economy of operation can never equal that of private enterprise, and the sole desiderate of Government

President Woodrow Wilson.

Whose recent utterances regarding big business have led to a feeling of encouragement and reflewed confidence.

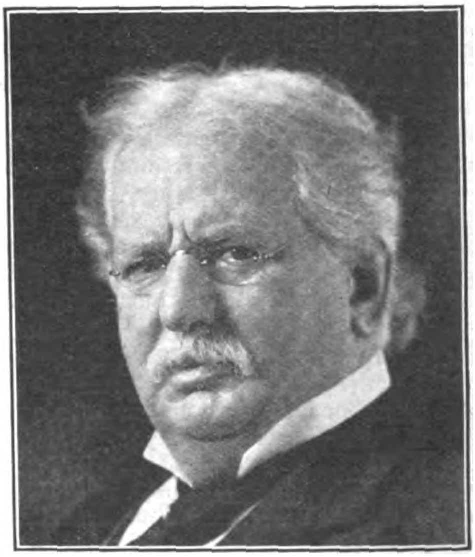
> should be equal legal opportunity for all and limitation on individual liberty only in his prohibition of preying on the personal or property rights of others. Our present drift to departmental rule and regulation instead of a Government of law, which is the greatest menace to the future of our country, would, in my opinion, simply be accentuated by Governmental ownership"

Theodore N. Vail, president of the American Telephone and Telegraph Company, has also taken occasion, in a newspaper interview, to discuss the recommendations made by the Postmaster General. Mr. Vail asserts that while of course the Government has the power to take over the telephone and telegraph lines, if they should decide to do so, he points out that it is a long step between the appraisement of the properties and taking them over. This requires both a great deal of consideration and a great appropriation. Discussing this phase of the question he says:

> "The properties are worth a great deal more than the securities issued against them. The book value of all the properties of the Bell Company and its associated companies is $160,000,000 greater than all the outstanding securities, and the appraised value of the properties is from ten to fifty per cent greater than the book value. Every public appraisement of any of our properties has shown that the actual value of the property is from ten to fifty per cent greater than the book value.
>
> "But this Government ownership is only rumor. Postmaster General Burleson may have recommended it, but until the question really becomes an Administration measure there is no necessity of discussing the matter fully or seriously. You know that other Postmaster Generals have advocated Government ownership. Mr. Hitchcock did, and you know that public officials sometimes have ambitions.
>
> "No, I am not in favor of Government ownership. My experience has been that it is not as satisfactory as private ownership. Public ownership in other countries has not been satisfactory. It's poor in France. I know what it is in Germany, and you have heard what it is like in England. It's not the kind of service you get in this country."

In the meantime, the American Telephone and Telegraph Company have reached an agreement with Attorney General McReynolds by which the company agrees to reorganize and so obviate the necessity of a suit against it for dissolution under the anti-trust law.

The terms of the agreement in brief, include the disposal of the company's holdings of stock in the Western Union Telegraph Company, the guarantee not to acquire control over any other telephone line or lines in the future, and the promise to permit independent telephone companies of the country to use its interstate wires. It is asserted that the Attorney General concedes that when a corporation of such magnitude, on its own motion, relinquishes its holdings in other companies and agrees to other propositions put forward by the Gov-



Theodore N. Vail.

President of the American Telephone and Telegraph Company, which recently has volunteered to reorganize its business in accordance with the provisions of the Sherman Anti-Trust Law.

ernment, it should be treated with every consideration in carrying out the terms of the agreement. It is understood that the plan not only meets with the hearty approval of the Attorney General, but with that of the President of the United States as well. In fact, so significant is it, that there now appears to be a prevailing opinion in Washington that legislation to acquire the country's telephone business will not be pressed by the Administration at the present session, in spite of the Postmaster General's recommendations.

Clarence H. Mackay, president of the Mackay Companies, also had the following to say regarding Postmaster General Burleson's recommendations:

"The Postmaster General is mistaken in his idea that telephone companies are subject to the Post Road Act of Congress of 1866. The Supreme Court of the United States in the Richmond case (174 U. S. 761) held that they are not.

"In denominating the telegraph business as being 'monopolistic in its nature' he is also mistaken. If there ever has been more continuous, keen and even bitter competition than that between the Postal and the Western Union I would be pleased to know when and where.

"The money question, however, is the main question; $900,000,000 would not be a lookin; the Bell Telephone companies alone would demand more than that. Then there are the thousands of independent telephone companies and farmers' lines scattered all over the country. The entire bill, including telegraph lines, would be about $2,000,000,000, which is about two-thirds of the national debt at the close of the Civil War, when many intelligent men despaired of the solvency of the Republic.

"Nor is this the worst, judging from English experience, that vast sum would be entirely lost, because under Government management the operating expenses year by year would exceed the income. The following figures are taken from a report of the Postmaster General of Great Britain, showing the results of Government ownership of telegraphs in that country:

	Receipts.	Actual operating expenses.	Operating loss.	*Total annual loss.
1908 ..	$15,516,805	$17,542,840	$2,026,035	$4,847,425
1909 ..	15,492,245	18,394,005	2,901,760	5,248,245
1910 ..	15,830,960	17,841,015	2,010,055	5,081,835
1911 ..	15,829,960	18,659,710	2,829,750	†5,911,605
1912 ..	15,747,420	18,985,090	3,237,670	5,636,965

*Including interest paid and fresh money expended.
†Estimated.

"And as to service—government service would be a joke as compared with present service. If you don't believe it just try the government service—telegraph and telephone—in Europe.

Following closely on the heels of the telephone company's decision to conduct its business in strict conformity with the Sherman anti-trust law, comes the announcement of the retirement of J. P. Morgan and four of his partners from thirty directorships in twenty-seven corporations. This action on the part of the country's greatest banking concern, calls attention to the fact that five important recommendations of the Pujo Committee have already been put into effect in advance of legislation of a compulsory character. They include the abandonment of fiscal agency agreements, such as existed between the New Haven and Morgan and Company; the abolition of interlocking directorates, the abolition of voting trusts, reforms in the Stock Exchange, and reforms in the clearing house. Whether Mr. Morgan will decide to withdraw from the directorate of the United States Steel Corporation is the subject of a great deal of speculation. The general opinion is that as the so-called steel trust was the greatest of the Morgan creations, and was considered by the elder Morgan the crowning achievement of his financial career, his son will consider it his duty to remain identified with it in an active way, especially until the Government suit has been decided one way or the other.

J. PIERPONT MORGAN.

Who with four of his partners, have recently resigned from thirty directorships in twenty-seven corporations, in order to meet the desires of the administration with regard to interlocking directorates.

It is also understood that George F. Baker another dominant figure in American finance, is soon to take similar action in withdrawing from the directorates of many large corporations. As a matter of fact, it is understood that Mr. Baker began severing such relations two years ago and will continue to do so as rapidly as he finds it possible. While other firms have as yet remained silent, the Morgan action is recorded as prophetic and is looked upon as the beginning of the end of the system of interlocking directorates which has been so bitterly attacked within recent years. It is hardly necessary to add that the action of Mr. Morgan has proved highly gratifying to the Government officials at Washington.

In addition to these important developments, President Wilson's attitude as expressed in his letter to Mr. McReynolds, and in his address made immediately after the signing of the currency bill, indicates the Administration's desire to co-operate with the public in the promotion of prosperity and the development of big business along legitimate lines. The talk of anti-trust legislation has already begun to lag at the National Capitol and the country is now looking forward more confidently than at any time within recent years, to a cessation of Government hostility towards business. It is certain that many Congressmen favor the plan approved by the President of permitting the trusts to disorganize out of court, thereby saving litigation and commercial disturbance, and it is also certain that the President himself desires it to be generally understood that honest business need have no fear from the present Administration. The keynote of his Administration thus far, has been the elimination of personal privilege and the giving of an equal opportunity to all. This has been reflected in the tariff act and in the currency act, and strongly suggests what may be the character of future anti-trust legislation.

DEVELOPMENTS IN ADVANCE RATE CASE

The most important development of the month in the Eastern advance rate case has been the action taken by the Interstate Commerce Commission in sending to the railways in Official Classification territory, a series of questions designed to develop further facts concerning the physical and financial operations of the roads in that section of the country. That the Commission appreciates the necessity of a prompt decision in this case, is indicated by the time limit set for answering these questions, which is January 31st. The questions are contained in a twenty-five page pamphlet and call for an enormous amount of material.

In submitting these questions, the Commission points out that while elaborate and helpful information has already been submitted by the roads showing the diminishing net returns from operations, these statements in themselves, do not furnish fully the data deemed by the Commission to be necessary to determine the general course the carriers may pursue to meet the situation, and for this reason, it has been found necessary to ask for additional data. It is the understanding of the Commission that some of the railroads are in a position to make full response to the questions without substantial delay, while others will require some time to compile their replies.

Summarizing the purport of the great mass of detailed information asked for, the Commission raises the following issues:

1. Do the commodities which are shipped in great quantity over long distances, such as grain, coal, meat, lumber, ore, iron, steel, cement, bear their fair proportion of the cost of railroad service, and is the disparity between through and local rates only what it should be?
2. Are passenger, express and mail traffic bearing their due proportion of operating and capital expenses? To what extent has State regulations of passenger fares reduced revenues
3. Are the carriers fully justified in making all the allowances they make shippers for lighterage, their own switching, use of "industry tracks," and in rendering all such free service as switching, loading and unloading freight, warehousing, reconsignment and milling-in-transit privileges, and special rates and train service?
4. Do the railroads purchase their supplies under competitive conditions, rigidly enforced as to quality of materials accepted, and do they employ scientific methods in testing equipment and supplies purchased?
5. To what extent are directors or officers of the carriers interested in firms or corporations selling materials or equipment to the railroads, or purchasing their securities, and what is the effect upon the railroads of such relations?
6. Should the railroads obtain more favorable terms from the Pullman Company, or could they get better financial results from operation of their own sleeping car service?

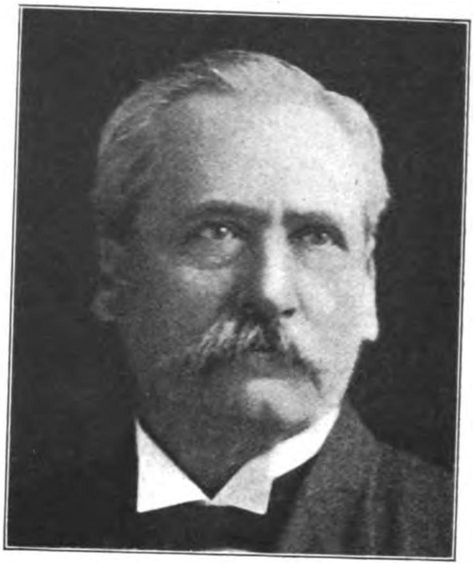
Gathering and returning all this information will cost the railroads heavily and may prolong the investigation, but if the result should be to confirm the asserion of the companies that there is no other way out of their impossible situation than an increase in rates, it will have been well worth the time and money. Furthermore, in replying to these questions, the railways will have full opportunity to permanently and effectually allay the general suspicion, due largely to the efforts of Mr. Brandeis, that their purchasing departments are loosely governed and that wasteful methods have characterized, to some extent, the purchase of supplies. While this additional burden at the present time is almost in the nature of a hardship, it has its encouraging feature, in that it surely indicates that the Commission is seriously impressed with the necessity of granting some measure of financial relief. While it does not necessarily follow that the Commission will grant the exact requests of the carriers, it shows an appreciation of the extent of the carriers' difficulties and an apparent desire to provide a substantial measure of relief.

Another encouraging feature of the situation, is that scarcely a day passes without public expressions of opinion from prominent shippers or commercial organizations to the effect that they favor, or at least will not object to, such increases in rates as will permit the carriers to conduct a progressive plant. Important commercial interests in a number of large cities are urging prompt action on this question, as the belief is rapidly growing that the Nation's progress and prosperity largely depends upon a fair and liberal treatment of the transportation interests, which it is seriously questioned at the present time, they are receiving. In other words, many commercial leaders are expressing themselves as confident that the American people are now ready to approve a rate advance and very few express doubts that such action will be taken. Already a number of representative leaders in commerce have forwarded private messages to Washington urging early and favorable action on the proposed rate advances, as a means of bringing about more normal general trade conditions.

A recent notable addition to the forces favoring the rate advances, is that of the Illinois Manufacturers' Association, which has decided to drop its opposition, as a recent report of a special committee which has been investigating railway conditions, announces that shippers might better stand the increase in rates than suffer an impairment of service that would follow a refusal to grant such increases.

In citing reasons for their change of opinion, the resolution stated:

"That the increase in wages granted through arbitration, the increase in taxes, the increased expenditure to insure greater safety to both the men and the public and the increase caused by legislation of the full-crew type have so increased the operating expenses of the railroads in general that the net revenues are insufficient to provide for that degree of rehabilitation and extension of facilities which prompt an efficient service to the shippers' demands."



JUDSON C. CLEMENTS.

Who President Wilson has appointed to succeed himself on the Board of the Interstate Commerce Commission.

That the public is beginning to realize how intimately this whole question is associated with their welfare is evidenced by many of the resolutions which are being passed by trade organizations, such, as example, the following, which was passed last month at the annual meeting of the Albany Chamber of Commerce, and was unanimously adopted:

Whereas, Financial statistics show that the savings banks of six States in the East have 6,636,343 depositors and that twenty per cent of their deposits are invested in securities of railroads, and,

Whereas, Albany has seven savings banks with 115,575 depositors and $88,420,704.75 total assets, a large part of which is invested in railroad securities, and,

Whereas, The increasing commerce of our country is constantly demanding more railroad equipment and larger terminals for its rapid movement, and,

Whereas, In the present unsatisfactory totals of railroad net earnings they are unable to borrow money for urgent improvements at a moderate rate of interest, now,

Therefore, We, the Albany Chamber of Commerce, most respectfully request the Interstate Commerce Commission to grant the application of the railroads for a five per cent increase in freight rates.

Railway men viewed with considerable relief the President's recent reappointment of Judson C. Clements to the Interstate Commerce Commission. When the freight rate hearing began on November 24th, a feeling of uncertainty existed regarding its outcome, because three vacancies were soon to be filled on the Commission. John H. Marble died suddenly on November 21st, Charles A. Prouty's resignation to take charge of physical valuation work and the expiration of Judge Clements' term, created a fear that three new and inexperienced members might be appointed at a time when the railway situation particularly required its interpretation by those whose training and experience would fully guarantee a decision to the best interests of all concerned. The appointment of Mr. Clements has dispelled this uncertainty to a large extent.

DECLINE IN PURCHASING POWER OF RAILWAY EARNINGS

In our issue of December we recited the salient facts as presented by the carriers at the hearing before the Commission in the rate advance case dealing with the principal data which were offered to show the operating conditions and financial results of the business. These all undertook to demonstrate that the existing basis of rates was inadequate and pointed out that the operating expenses absorbed a greater proportion of earnings than ever before and that the net results were gradually diminishing and were insufficient for proper return on investment.

An examination of the figures as included in the presentation made by the carriers conclusively shows these facts. We will not again review these data in detail, and need only point to the general results of the business as shown in the comparison of 1913 with 1910, during which period there was an increase in property investment of 11.74 per cent, an increase in operating revenue of 15.09 per cent, an increase in operating expenses of 22.79 per cent and a decrease in net operating revenue of 5 per cent. The return on property investment for the year 1910 was 6.28 per cent, and in 1913 5.36 per cent.

These brief figures should be sufficient to demonstrate to the business man's mind that these ratios of receipts, expenditures and investment return are wholly disproportionate and that some readjustment of the conditions which produce these results is absolutely necessary for the proper maintenance of the industry.

A salient feature in the presentation of the carriers, and one which we consider should receive greater public attention than heretofore, is that of the purchasing power of the carriers' earnings, which it is shown has materially declined. In this connection, we quote the following from the testimony of Mr. Charles A. Conard:

> "I have endeavored in this discussion to limit myself to a few simple propositions, which I think are well understood among economists and have been sufficiently proved, so far as such matters are susceptible of exact proof. We have seen that there has been an advance in prices of commodities of a broad and general character. Insofar as the advance in prices has been uniform in different industries, and insofar as the increase in the wages of labor has corresponded to the advance in prices, equality of conditions under the present value of the dollar has been established. The railways, however, have not shared in this advance in the money expression of services in any such degree as other industries and wage-earners.
>
> It is worth noting in this connection that if the commercial clients of the railways have in nearly all cases been able to obtain an increase in their receipts in money, corresponding to its diminished purchasing power, these clients have not been called upon to disburse in freight rates the ratable proportion of their increased charges to the consumer, and have from the enforced rigidity of such rates in terms of money transferred an unearned increment to their own coffers at the expense of the railways. The railways have not adapted their charges, as have other industries, to the change in the purchasing power of money. They have continued to sell their services for an amount which has remained comparatively fixed in money, but has declined greatly in purchasing power. Such additional capital as they have sought by the issue and sale of securities has been obtained on higher terms than in former years, while its purchasing power, in materials and wages, has been much less than in former years. The railways have been in the peculiar position of seeing prices rising all around them, while they have been unable to make advances proportionate to their changed relations to other industries.
>
> "If the value of the money received by the railways for their services has so seriously declined in purchasing power as to deprive them of the means of meeting their legitimate charges and obtaining new capital at its present rental price, they are not on an equality with other industries; they are receiving a much less proportionate share of the proceeds of the economic output of the country than that which they formerly received; and they are less capable of contributing their share to equipping this country for unfettered competition with other countries in the field of production and international commerce."

PHYSICAL VALUATION PLANS

The Government Board of Engineers and the Committee of Railroad Engineers in charge of physical valuation, have held a number of conferences recently in Washington and have agreed upon a tentative plan of procedure in carrying out the work.

The railroads will furnish the Government with a complete inventory of all property owned, exclusive of grading. This inventory will give three valuations—original cost, replacement cost and replacement cost less depreciation. The Army Board will survey all rights of way and make cross-section surveys of the grading elevations and cuts and in conjunction therewith will check up the inventories previously submitted by the railroads. A railroad engineer representing the road under investigation will be permitted to accompany each Government board and the railroads will receive daily copies of the reports submitted by the Government engineers. It is estimated it will cost the Government between $25,000,000 and $30,000,000 to make a complete valuation of all the railroads. The cost to the railroads will be between $15,000,000 and $20,000,000.

Work started upon an experimental basis in January. The preliminary valuations will be in the nature of a try out, and will cover the properties of the Atlanta, Birmingham and Atlantic and the Norfolk Southern in the South, the Kansas City Southern in the Middle West, including about 100 miles of the Santa Fe and of the Rock Island in Oklahoma, where the railroads recently made reports upon physical valuation to the state commission, and of the San Pedro running from Salt Lake to Los Angeles. It is not expected that general operations on the other roads will be commenced before next summer.

Railroad officials generally continue to feel that a physical valuation, which can only be procured at an enormous expense, will serve no useful purpose after being completed. A president of a prominent road recently in discussing the possible results to be obtained from such a valuation said:

"When the physical valuation is completed it will be worthless because it will be obsolete. The time it will take to make a proper valuation will prohibit its being up to date or accurate. For purposes of taxation or rate making it is worthless. The value of a property is what it can earn. Earnings have no relation to initial cost or present cost or replacement value except indirectly. They have nothing at all to do with capitalization. Some of the lightest capitalized roads are the heaviest earners, and some of the heaviest capitalized are the lightest earners.

"The Government seeks to secure this physical valuation primarily for rate-making; second, for proposed legislation to control future issuance of capital, and third, to see if Government ownership is feasible. The Government, with few exceptions, will find that the railroad properties are physically worth more than their capital represents, but earnings on property investment vary so greatly because of varying conditions that the only test of intrinsic value is earnings.

"For purposes of taxation the States should determine upon a certain percentage of gross earnings. Every railroad management seeks to return the most gross business it is possible to show and all the property is capable of earning. There would be no opportunity to cover up if the basis was gross earnings rather than net. This plan would also avoid pitfalls of basing tax ratables on capitalization, physical valuation or efficiency of operation. Moreover, the taxing authorities would have the basis of taxation right in their hands in the monthly and annual reports filed with the Interstate and State Commissions."

PUBLIC EXPRESSIONS BY PROMINENT MEN

A number of important addresses in which the economic problems of the country are discussed, were made during the month by prominent men both in and out of the railway service.

Samuel Untermyer in addressing the members of the Illinois Manufacturers' Association on January 5th, declared that the country's greatest need was a powerful executive body to take over the work which the Attorney General of the United States

Samuel Untermyer.

JUDGE E. H. GARY.

Chairman of the Board of Directors of the U. S. Steel Corporation, who urges courage, détermination, confidence and conservatism in the steel business until the unusual strain imposed upon this industry by the new tariff law shall have passed.

and the Federal Courts have attempted in enforcing the disintegration of large corporations. Mr. Untermyer's specific recommendation to remedy what he considers a defect in the legal machinery of the National Government, rests in the establishment of an industrial commission into which he considers the present Bureau of Corporations should be merged. He believes that this step, and the enlargement of the powers of the Interstate Commerce Commission, are fundamental to any effective scheme for enforcing the segregation of unlawful combinations under the Sherman anti-trust act.

Judge Elbert H. Gary, chairman of the Board of Directors of the United States Steel Corporation in his recent New Year's greetings to the presidents of the subsidiary corporations urges courage, determination, confidence and conservatism as demanded until such time as the strain naturally imposed upon day-to-day conditions through the introduction of new tariff and currency laws has passed. He urges that expenditures be limited to necessities in order that cash resources of the corporation be conserved as much as possible pointing out that while the largest railroad systems may borrow funds on short term notes the Steel Corporation cannot afford to do so because of the sentimental effect of such proceedure.

Referring to the currency bill, tariff changes and the income tax, Judge Gary says:

"It is not necessary now to discuss the wisdom of any of these measures nor the final effect of any of them in the administration of our business affairs. But it seems to me we would be foolish in considering our immediate action to overlook the fact that there must necessarily be some strain upon conditions by reason of these important and perhaps somewhat radical changes in the laws of the country, and if so we ought to govern ourselves accordingly. The prudent man should have courage and determination and confidence and yet at the same time should look squarely in the face of all of the important factors that make for the welfare or otherwise of the country. This is a time for persistency, discretion and aggressive courage on your part. It is a period when every one of you should keep his hand on the throttle of his business engine.

"The word necessary as applied to expenditures perhaps is very comprehensive, but necessary expenditures should always be made. Foremost under that head I would say any money you can pay out to increase the safety of your employes is necessary and proper. Never hesitate to request appropriations for expenditure of money which is calculated to prevent accidents to your employes. Keep that thought uppermost in your minds and remember that any such request will be promptly approved."

Irving T. Bush, president of the Bush Terminal Company, recently made the following interesting statement regarding the outlook, from his point of view:

IRVING T. BUSH.

President of the Bush Terminal Company, who is emphatic in his praise of the new currency bill which he believes will prove a potent influence in a great expansion of American business.

JACOB H. SCHIFF.

Directing head of Kuhn, Loeb & Company, New York bankers, who also believes the new currency bill will prove instrumental in bringing about a speedy resumption of business.

"With the signing of the currency bill by President Wilson, I became an optimist. This does not mean that we may expect a great expansion of American business to-morrow or next week, but it does mark, in my opinion, the beginning of the next cycle of national prosperity.

"Tariff uncertainty is over and the currency measure, after the proper establishment of the system, will put this country in a position to take its place as an international money power and will give us a financial machine which will make us as nearly independent of foreign countries as it is possible for any nation to be."

Jacob H. Schiff, head of Kuhn, Loeb and Company, of New York, reviews the outlook by saying:

"With the passage of the currency bill, legislation highly pleasing to me, I expect to see a speedy resumption of business, and I am sure business confidence will be materially strengthened and conditions improved all over the country."

ANNUAL REPORT OF POSTMASTER GENERAL

In view of the fact that the railways are still struggling for a readjustment of railway mail pay conditions, and that as yet the Government has made no suitable provision for compensating them for the enormous amount of parcel post traffic, the great proportion of which they have undoubtedly been carrying without compensation of any sort, the statement made in the recent annual report of the Postmaster General to the effect that the postal service is now self-supporting for the first time since 1883, will be received with feelings of mixed emotion by railway officials.

The question of railway mail pay is one of paramount importance to the carriers in view of their insufficient net income of the past year, and it is earnestly to be hoped that the Government will recognize the grave injustice of the present arrangement and take prompt measures to grant the proper and necessary relief.

In his annual report the Postmaster General deals at some length on the matter of compensation to railroads for carrying the mails and states that the matter is now under consideration by Congress. Among other things he says:

"Compensation to railroads for carrying the mails, is, under the present laws, adjusted upon the basis of average daily weights of mails carried. In addition to this, certain rates of pay are allowed for full railway post office cars forty feet and more in length, fitted up and furnished for the distribution of mails enroute. Reference has been made in previous annual reports to the inquiry conducted by the Department under authority of law into the operating receipts and expenditures of railroad companies carrying the mails and the submission to Congress of the results of such inquiry, together with recommendations for a change in the method of adjusting pay.

"The whole subject has since been taken up by a joint committee of Congress authorized to make inquiry into the subject of postage on second-class mail matter and compensation for the transportation of mails. In the meantime,

ALBERT BURLESON, U. S. POSTMASTER-GENERAL.

the new conditions in the postal service, mainly those arising from the inauguration and the development of the parcel post system, are being given careful consideration in connection with the general question and before the commission is ready to report the final views of the Department will be submitted to it.

"The determination of what shall be the basis for ascertaining a fair rate of compensation for carrying the mails is not free from difficulties. From a careful consideration of the subject it becomes evident that the carriage of the mails by the railroad companies for the Government cannot be considered as of the same character of services as that performed by them as common carriers for the general public. The railroads have received certain benefits from the States from which they derive their corporate existence, and their interstate commerce is subject to the regulation of the Federal Government. Some of them have received substantial aid from the Federal Government by grants of lands and otherwise. They are declared by law to be post roads. As mail carriers they are agencies of the Post Office Department and are performing a governmental function. The postal business is not carried on by the Government for profit, but in furtherance of the constitutional power to establish post offices and post roads under which it furnishes postal facilities to all of its citizens. The railroads, therefore, may not deal with the Government as they would with a shipper who uses their facilities as a common carrier for profit or for some special advantage.

"When the data in hand and now being secured by the Department are thoroughly considered and analyzed the Postmaster General will lay before the appropriate committees of Congress the conclusions reached as to what will be just and adequate compensation for all services which the railroads are rendering or will be called upon to render the Government for mail transportation.

THE DEATH ROLL OF 1913

The year 1913 was especially noticeable in the large number of deaths of men who have held important positions and places in the railroad fraternity. Among these were four chairmen of boards of directors, nineteen presidents, two former presidents, four vice-presidents, five former vice-presidents, and numerous other officials well known with the companies with which they were associated.

It is impossible to contemplate the following list without a profound feeling of sadness, because of the fact that in all probability had it not been for the unusual stress and strain in railway developments of the past two or three years, many of these men would still be performing a service for their company and their country. It is to be hoped that the present year will see a cessation of this strain and that the whole situation will become more leavened with kindness and tolerance, permitting men to work in harmony and good fellowship. The list has been arranged according to months. May it never be necessary again to print so long a one.

JANUARY.

Barnes, J. T. Mason, Secy and Treas., Western Maryland.
Beach, Charles A., Prest., Catskill Mountain Railway.
Beach, Gaylor M., Formerly Special Agent, Pittsburgh & Lake Erie.
Bonfield, Thos. P., Prest., Kankakee & Seneca.
Coykendall, Saml. D., Prest., Ulster & Del.
Cull, E. H. B., Div. F. A., Wabash.
Douglas, Earl P., Agt., Star Union Line.
Ellison, J. M., Passenger Agt., Denver & Rio Grande.
Fell, Abraham, Formerly G. W. F. A., D. L. & W.
Hudson, Fred. C., Genl. Atty., Iron Mountain.
Lacy, Frank H., Com. Agt., Atlanta & West Point.
McGie, J., Supt., C. R. & Pac.
Miller, Roswell, Chairman of Board, C. M. & St. P.
Palmer, Stephen S., Prest., Green Bay & Western.
Parker, Geo. W., Genl. Agt., Illinois Central.
Preston, I. T., G. A., Frisco Lines.
Raoul, Capt. Wm. G., Railway President.
Reese, Edward, Roadmaster, C. M. & St. P.
Wann, John Thomas, Formerly Auditor, Erie Railroad.

FEBRUARY.

Brame, Milton H., Civil Engineer, M. K. & T.
Brendler, Otto, Trainmaster, C. M. & St. P.
Cairns, John J., Pessenger Agent, C. M. & St. P.
Cheever, A. S., Asst. to V. P., B. & M.
Copland, George, V. P., Secy. and Treas., Lexington & Eastern.
Fritz, John, Veteran Iron and Steel Master.
Fry, Urias J., Supt. Telegraph, C. M. & St. P.
Gilluly, Jos. W., Treas., Denver & Rio Grande.
Gossett, Charles E., Master Mechanic, M. & St. L.
Jenkins, J. E., City Ticket Agent., C. B. & Q.
Jones, Wm. R., Formerly Asst. Supt., Utica & Black River.
Law, Robert, Formerly V. P. & G. M., Col. & Northwestern.
Lassiter, J., Supt., Southern Ry.
McKeen, Wm. Riley, Formerly V. P., Vandalia.
O'Meara, W. J., E. P. A., C. B. & Q.
Price, H. A., A. G. P. A., Inter-Colonial Ry.
Randall, Wm., Aud., Frt. & Ticket Accts., C. B. & Q.
Roby, T. W., Comptroller, Seaboard Air Line.
Seymour, Robt. B., Formerly Chief Engineer, C. I. & S.
Singer, Wm. Jr., Formerly Land Atty., Southern Pac. Co.
Tyrrell, Patrick, Auditor, C. M. & St. P.
Williams, Henry A., A. G. Supt., C. M. & St. P.
Winne, Wm. N. D., Comptroller, C. M. & St. P.
Young, James C., Engineer, Union Pac.

MARCH.

Archibald, Peter S., Formerly Chief Engr., Intercolonial.
Augier, Alton, Formerly G. P. A., of W. & A.
Brandeis, Albert S., Genl. Solicitor, L. & N.
Buhrer, Caspar, Formerly Roadmaster, L. S. & M. S.
Crissey, John W., Asst. Engr. of Construction, L. S. & M. S.
Eden, Edward H., Formerly Northwestern Agent, D. L. & W.
Kerr, C. I., Trainmaster, C. R. I. & P.
McCrea, James, Prest., Penn. R. R.
Moss, Arthur W., Div. Supt., Penn. R. R.
Nicholson, Geo. T., V. P., A. T. & S. Fe.
Peck, E. A., Supt., St. L. S. W.
Petheram, J. W., Formerly Chief Engr., M. K. & T.
Price, John R., Pioneer Railroad Builder.
Rogers, Howard W., Trav. Frt. Agt., Illinois Central.
Rogers, Wm. E., Formerly N. Y. State R. R. Commissioner.
Scaife, Charner T., Chief Claim Agent, Illinois Central.
Smith, Reuben F., Prest., Cleveland & Pittsburgh.
Tapp, P. J., Com. Agt., Southern Ry.
Wood, Charles G., Formerly Treas., V. C. & P.

APRIL.

Carson, G. A., Prest., Catawissa R. R.
Coakley, Jeremiah J., Supt. Terminal R. R. Assn. of St. Louis.
Dickson, Henry C., Trav. Pass. Agt., D. L. & W.
Frost, Wm. H., Pioneer R. R. Contractor.
Gilman, D. H., Railroad Builder.
Kuersteiner, Emil E., Formerly Bridge Engr., L. & N.
McCord, John R., Formerly Trav. Pass. Agt., C. H. & D.
Metheany, Rich. R., Secy. & Aud., Grand Rapids & Ind.
Myers, F. H., Div. Supt., C. M. & St. P.
Pugh, Chas. E., Formerly 1st V. P., Penna. R. R.
Quackenbush, A. W., Formerly Master Mechanic, Q. O. & K. C.
Rump, George A., Com. Frt. Agt., Wabash.
Simpson, Lieut. Col. Wendell L., U. S. A. Retired. Head of Purchasing Department. Panama Railroad.
Tracy, Frank D., Real Estate & Tax Agt., C & A.
Wakeman, E. B., Former Supt., Minneapolis Union Railway.
Weller, John H., Formerly Supt., Dayton & Mich., now Toledo Div. of C. H. & D.

MAY.

Bowman, Peter E., Formerly Supt., N. Y., N. H. & H.
Burt, Horace G., Formerly Prest., Union Pac.
Chase, George E., Pass. Agt., C. M. & St. P.
Crocker, George G., Chairman of the Bd., Boston Transit Com.
Cutler, Jos. G., Roadmaster, N. P.
Davis, Wm. Ed., P. T. M., Grand Trunk.
Dunnean, Maurice, Roadmaster, C. R. I. & P.
Flagler, Henry M., Chairman of Board, F. E. C.
Lasier, Napoleon B., G. B. A., B. & O.
McCabe, J. C., G. F. A., C. R. I. & G.
Miller, Edwin O., Com. Agt., C. R. I. & P.
Seibert, Robt. S., Prest., East Broad Top R. R. & Coal Co.

JUNE.

Cramp, Edwin S., Formerly V. P., Wm. Cramp Sons S. & E. B. Co.
Cushman, John Clark, Formerly Secy., Plymouth, Kankakee & Pac., now part of N. Y. Central System.
Fitzgerald, Thos. J., Formerly Resident Engr., S. P. Co.
Heimrich, John, Prest., Great Southern.
Jones, Edwin Tracy, Aud. of Revenue, Southern Railway.
McAllister, Wm. K., G. A., S. P. Co.
Moore, E. W., Supt., M. & O.
Payne, Walter T., F. F. A., N. & W.
Rice, Hy. F., Former Genl. Supt., C. R. I. & P.
Walker, Hy. Wilkes, Retired Genl. Aud., Grand Trunk.
Ward, Francis E., Former G. M., C. B. & Q.

JULY.

Adams, Francis Hasley, Formerly Genl. Storekeeper, C. & N. W.
Aird, Gordon A., G. A., A. T. & S. Fe.
Brady, Anthony N., Chairman Bd. Directors, B. R. T.
Brown, Alex., Sig. Engr., C. M. & St. P.
Eaton, G. H., Asst. Master Car Bldr., Canadian Pacific.
Hanson, Arthur S., Formerly G. P. A., B. & A.
Haugh, James C., Resident Engr., N. O. & N. E.
Hill, David S., Genl. Supt., Lake Erie & Western.
MacKinnon, Paul R., Trav. Pass. Agt., C. R. I. & P.
McReynolds, Gavinus, Master Mechanic, Frisco Lines.
McRoberts, G., Div. Foreman, St. L. & S. F.
Maxwell, W. J., Grand Secy and Treas., Order of Railway Conductors.
Newhall, Daniel S., Purchasing Agt., Penna. Railroad.
Power, M. J., Genl. Storekeeper, Canadian Pac.
Robinson, Chas. J., Former Asst. Paymaster, S. P. Co.
Taft, Edward A., Mgr., Express Dept., N. Y., N. H. & H.
Taussig, Wm., Prest., St. Louis Bridge Co., Organizer and former Prest., Terminal R. R. Assn. of St. Louis.
Taylor, John H., Genl. Supt., Great Northern.
Thompson, Hy. Martin, One of the first three R. R. Commissioners of the State of New York.
Wheeler, Herman, Formerly A. G. P. A., C. & N. W.

AUGUST.

Brown, Vernon H., Former Am. Mgr., Cunard Line.
Cook, John S., Master Mechanic, Georgia R. R.
Coughlin, John J., Roadmaster, Las Vegas & Tonopah.
Courtright, J. A., Formerly Trainmaster, C. C. C. & St. L.
Fraser, George M., T. M. & Supt., Nev. Copper Belt R. R.

Haskell, Edward A., Formerly Div. Engr., B. & A.
Hudgins, Col. Hy. C., G. A., Norfolk Southern.
Holliday, John W., Supt., New Eng. Ry. Mail Service.
Irwin, George L., Formerly Div. Supt., C. & N.
McMillan, Alex. F., Chief Clk., Pass. Traffic Department, N. Y. C. Lines.
Silver, Herman, Former Receiver, L. A. & P.
Smith, W. C., Chief Engr., N. P.
Teillott, Thos. R., Former Supt., Pbgh., New Castle & Lk. E., now part of B. & O. R. R.

SEPTEMBER.

Andrews, George, G. A., Pac. Coast S. S. Co.
Crary, George W., Treas., N. O., M. & C.
Driscoll, J. J., Trainmaster, B. & O.
Hartman, H. W., Prest., Denver & South Platte.
Haupt, Samuel B., Prest. & G. M., Susquehanna, Bloomsburg & B.
Hudson, S. M., Auditor, Fort Worth & Denver City.
Hughes, George M., Prest. & G. M., N. J., Ind. & Ill.
Ingham, Wm. A., Formerly Prest., East Broad Top R. R. and Rock Hill Iron & Coal Company.
McCarrick, Jos. D., Div. F. A., Southern Ry.
Ray, Wm. F., Genl. Supt., B. & M.
Robertson, Fredk. C. N., Auditor, Pullman Co.
Smith, James, Formerly T. M., Wabash.
Taylor, C. M., Mechanical Supt., C. R. I. & P.
Trimble, Judge J. McD., Formerly Genl. Counsel, K. C. & M. & O.
White, E. T., Dist. Supt., Motive Power, B. & O.

OCTOBER.

Barnett, Wm. E., Former V. P., N. Y., N. H. & H.
Brown, Frank E., A. G. P. A., B. & M.
Carskaddon, Benj. W., Real Estate Agt., Pennsylvania Railroad.
Evarts, Maxwell, Genl. Counsel, S. P. Co.
Florence, Charles A., Exp. & Imp. Agt., Illinois Central.
Gillett, Ralph D., Prest., Hampden R. R. Corpn.
Grafton, Wm. McCullough, Sig. Engr., Penn. Lines West.
Hooper, D. E., Supervisor Bridges & Bldgs., Southern Railway.
Lee, George F., G. B. A., C. R. I. & P.
Noble, Stephen W., D. F. A., H. & T. C.
Parrott, Jos. R., Prest., Fla. E. C.
Prindiville, E. S., Trav. Pass. Agt., C. B. & Q.
Rawlins, Fredk. L., Supt., Telegraph, S. P. Co.
Roach, Milton C., G. E. P. A., N. Y. C. & H. R.
Sprigg, Wm. Osbourne, Formerly Supt., L. V.
Weymouth, E. P., Formerly Div. Supt., N. P.
Zollinger, L. R., Engr. Maintenance of Way, Penna. Railroad.

NOVEMBER.

Bettis, Horace I., Aud., San Pedro, Los Angeles & Salt Lake.
Charlton, James, Chairman, Transcontinental Passgr. Assn.
Emerson, Thos. M., Prest., Atlantic Coast Line.
Finley, W. W., Prest., Southern Ry.
Gordon, Wm. G., Asst. Aud., Treas. Department, C. B. & Q.
Hagerman, James, Former Genl. Counsel, M. K. & T.
Harris, Jos. E., Formerly Agt. Union Line of Penna. System.
Haskell, Fredk. A., Formerly G. F. A., N. Y. C. & H. R.
Johnson, W. P., Formerly G. P. A., L. S. & M. S.
Kretzinger, Geo. W., Atty., Grand Trunk.
Marble, John H., Member Interstate Commerce Commission.
Pfender, C. E., Aud. & T. M., C. & Ill. Western.
Ramsey, Matthew J., Chief Clk., to G. M. of Penn. Railroad.
Smith, Charles H., Trav. Frt. Agt., C. I. & S.
Vaughan, W. A., Former Genl. Supt., Southern Railway.
Williams, A., V. P. & G. M., Ocean Shore R. R.

DECEMBER.

Borner, William, Formerly Asst. to F. T. M., Penna. Railroad.
Chirm, E. J., G. F. A., Chesapeake S. S. Co.
Jones, Dwight A., Prest., M. R. & B. T.
Martin, Henry, V. P. & G M,, I. & G. N.
Musson, C. S., T. F. A., N. Y., C. & St. L.
Rhame, Mitchell D., Formerly Engr., C. M. & St. P.
Savage, F S., Advertising Mgr., A. T. & S. F.
Sutherland, David S., G. A., M. C.
Sweeney, Michael, Formerly V. P. & G. M., Trinidad & Brazos Val.
Thomas, John W., Jr., Prest. & G. M., N. C. & St. L.

Railroading in 1846.

(From the "Boston Herald.")

A CORRESPONDENT, Prof. Edward L. Morse, of Salem, sends us the following extract from a letter written by Louis Agassiz to his mother. The letter is dated Boston, December, 1846:

"Leaving Boston the 16th of October, I went by railroad to New Haven, passing through Springfield. The rapidity of the locomotion is frightful to those who are unused to it, but you adapt yourself to the speed and soon become like all the rest of the world, impatient of the slightest delay. I well understand that an antipathy for this mode of travel is possible. There is something infernal in the irresistible power of steam, carrying such heavy masses along with the swiftness of lightning. The habits growing out of continued contact with railroads, and the influence they exert on a portion of the community are far from agreeable until one is familiar with them. You would cry out in dismay did you see your baggage flung pell-mell like logs of wood, trunks, chests, traveling bags, hat boxes, all in the same mill, and if here and there something goes to pieces no one is astonished. Never mind! We go fast—we gain time; that is the essential thing."

And this was on the Boston & Albany! And there was baggage-smashing in 1846!

Contemporary Opinion

THE OUTLOOK AS VIEWED BY PROMINENT RAILWAY OFFICIALS.

THE New York *Evening Post* has for several years published, as a feature of its annual financial review, the opinions of prominent railway presidents regarding general railway conditions and the probable outlook for the new year.

It is of interest to note that the opinions published a year ago, proved remarkably accurate in forecasting the general results for 1913. In other words, at that time the consensus of opinion of railway presidents appeared decidedly optimistic as to gross earnings but was not so favorable with regard to net results. The general figures when completed will undoubtedly uphold these predictions, for while gross earnings for October, November and December are not likely to show so favorable results as they did for the corresponding months of 1912, the increase during the first nine months of the year has been such as to offset any decrease which may appear for the last three months. On the other hand, the decided decrease in net during eight months of the calendar year 1913, will leave a total decrease for the year of such decided proportions as to fully vindicate the opinions expressed at the beginning of the year.

As the *Evening Post* points out, a year ago railway presidents were strongly of the opinion that freight rates should be increased. As our readers know, this opinion has crystalized within recent months in the petition filed with the Interstate Commerce Commission for a horizontal increase of five per cent, in Official Classification territory. The questions which the *Evening Post* submitted to the railway presidents include a reference to this appeal for higher rates, as well as to a number of other important recent developments which are affecting the welfare of the carriers. These questions are as follows:

(1) Does the railway business for 1914 promise to be better than 1913, or worse.

(2) Do you expect the Interstate Commerce Commission to grant higher rates? What, to your mind, is the most conclusive argument in favor of the proposed increases?

(3) Is Government ownership of railways a possibility if the Government were to show continued reluctance to permit increased rates?

(4) Do you approve or disapprove of the Government's plan for physical valuation of the railroads?

(5) What special points impress you as favorable or unfavorable in the railway situation?

Many of the officials addressed, have taken the trouble to submit answers of considerable length and in such a manner as to throw a strong light upon several of the more vital problems now confronting railway management. These answers are presented herewith, those from all officials being grouped in accordance with each question:

QUESTION NUMBER ONE.

(1) Does the railway business for 1914 promise to be better than 1913, or worse?

F. A. Delano, President, Chicago, Indianapolis and Louisville.

(1.) I think the railroad business for the calendar year 1914 will hardly measure up to 1913, although I doubt if it will go very far behind it; in other words, that the losses which are likely to come in the first few months of 1914 will be largely made up by gains in the latter part of the year.

Ralph Peters, President, Long Island.

(1.) In my judgment, the railroad business for 1914 promises to be worse than in 1913, and yet the situation is such that conditions may change very quickly, resulting in an improvement, rather than a continuation of the present very unfortunate condition. With business adjusting itself to the new tariff conditions, with an advance in freight rates, and with the financial situation improved by the settlement of the currency question through the passage of some reasonable law by Congress, it is possible that the railroads can so adjust their finances as to undertake new developments and improvements that will start up all classes of business. A discontinuance of the restrictive legislation being adopted in all state legislatures, and the leaving of all such matters to the Interstate Commerce Commission, would go a long way towards improving the situation. Everything has been done that could possibly be done to help labor. Every restriction that could possibly be devised has been thrown about capital. The third element in all general business that seems to have been neglected is enterprise. The neglect and the ill treatment of enterprise has almost killed it, it will require very careful, constructive treatment to put new life into the third element so vital in the partnership of industry, viz., enterprise, in order that it may command capital and employ labor.

B. F. Bush, President Missouri Pacific.

(1.) My opinion is that for the first few months of 1914 the volume of business will probably not be so great as it was for the corresponding months of 1913. The determining factors as to the remainder of the year will be the *then* crop conditions and prospects, the trend of legislation, and the ability of the railroads to make necessary purchases which will greatly contribute to a revival in general and industrial activity.

The unsettled conditions arising out of legislative questions affecting finance, industry, and trade have created uncertainties in the minds of the banker, manufacturer, and merchant, and as a consequence their operations are now being conducted with extreme conservatism. Coupled with these is the inability of the railway companies, through largely increased expenses and lack of compensatory rates, to give as formerly that substantial impetus to business which results from extensive purchases of equipment and materials for the betterment of operation of their properties.

E Pennington, President, Minneapolis, St. Paul and Saulte Ste. Marie.

(1.) The prospects for 1914 do not look as good as they were in 1913.

E. P. Ripley, President, Atchison, Topeka and Santa Fe.

(1.) I think in most parts of the country it will be considerably worse; there may be here and there localities where the crops have been better. Certainly in our territory it is far from being what it was last year.

S. M. Felton, President Chicago Great Western.

(1.) The outlook for railroad business during the year 1914 is not encouraging, and unless conditions materially change, I do not look for railroad earnings to be as large as they have been for the calendar year just closing.

Daniel Willard, President, Baltimore and Ohio.

(1.) At the present time the outlook for railway business for 1914 seems less favorable than was the case a year ago.

F. D. Underwood, President, Erie.

My answer to question No. 1 is: That the volume of business will be less and the net results likewise in the calendar year of 1914 than in 1913.

C. E. Schaff, President, Missouri, Kansas and Texas.

(1.) Railway earnings in the Southwest during 1914 will, in my opinion, be less than they were in 1913.

L. E. Johnson, President, Norfolk and Western.

(1.) Does the railway business for 1914 promise to be better than in 1913, or worse?

If the Interstate Commerce Commission grants the application of the railroads for an increase in rates, I have no doubt that the business will be better in 1914 than in 1913.

H. U. Mudge, President, Chicago, Rock Island and Pacific.

(1.) The railway business for 1914 does not promise to be so good as in 1913.

L. F. Loree, President, Delaware and Hudson.

(1.) Present indications are that the year 1914 will witness a sharp recession in general business, and, of course, this will include curtailment of railway traffic. Any reduction in traffic movement necessarily involves a corresponding decrease in gross receipts and more than a proportionate diminution in net corporate income, for the reasons (a) that many expenses of a general character cannot be reduced in correspondence with reductions in traffic, and (b) that it is in the approaching period of depression that the full effect of recent compulsory increases in wages and the burden of legislative enactment will be felt. Moreover, business depression inevitably falls most heavily upon the railways, because they are subject to the exceptional requirement that at all times their facilities must suffice to move the maximum volume of traffic that may seek transportation. The consequence is that in times of depression the railways have a larger proportion than other industries of unproductive capital.

A. H. Smith, President, New York Central.

(1.) The railroad business for 1914 does not promise to be so good as the business for 1913. To be as good as 1913 there should be an advance in gross traffic of at least five per cent, corresponding to the normal growth of the country. At the present time there is no such increase in business beyond the growth of last year. On the contrary, there is a slight decrease in volume. It is quite difficult to estimate how long this situation may continue, as it is contingent upon many circumstances. In several sections of the country the fruit and cereal crops have not been so bountiful as formerly. This will be reflected in the winter and spring purchases of manufactured articles. The remedy for this must await the harvest of 1914. There appears also to be a readjustment of prices and markets, temporarily at least, to conform to new tariff conditions; and, in view of pending legislation upon currency and railroad regulation, there is conservatism among people who have money to invest.

In the end, this conservative attitude may be profitable, but for the present it means a smaller volume of business, and, in view of the substantial increases which have been made in wages during the past year, it also means somewhat less net revenue, and less employment for a good many thousand men.

Fairfax Harrison, President, Southern Railway.

(1.) The present outlook for railway business in the Southeastern states in 1914 is favorable. Except in restricted localities, affected by drought, crop yields were larger in 1913 than in 1912, and prices of agricultural products are generally good. The consequent enlargement of the purchasing power of the farmers may be expected favorably to affect the volume of wholesale and retail trade. Southeastern industries are generally enjoying a good demand for their products. It is yet too early to anticipate whether this will continue through the year 1914.

F. H. Britton, President, St. Louis Southwestern.

(1.) No. I look for it to become worse.

QUESTION NUMBER TWO.

(2) Do you expect the Interstate Commerce Commission to grant higher rates? What, to your mind, is the most conclusive argument in favor of the proposed increases?

F. A. Delano, President, Chicago, Indianapolis and Louisville.

(2.) I certainly do. The most conclusive argument is that the railroads have shown by most unanswerable figures that they need increased net revenue. It has also been shown that this must be obtained in one of two ways: either by raising rates or by diminishing expenses. Railway officials feel that while there is always room for some improvement in better methods, they are unable to stem the tide of the diminished purchasing power and increased public demands in any way except by increased revenue.

In 1910, the proposition to increase some rates, especially the so-called class rates, leaving the low-grade commodities alone, was objected to by the Commission. After considering carefully the arguments of the Commission in rejecting the plea of the carriers at that time, the railway officers came to the conclusion that their best course would be to make a general advance in rates, leaving the relation of all rates to each other absolutely undisturbed. By this action, it appears to me that the railroads have made their case when they show the necessity for net revenues, and that any interest or group of interests that claim that certain rates should not be advanced must sustain the burden of proof as to why an exception should be made.

Ralph Peters, President, Long Island.

(2.) I expect the Interstate Commerce Commission to grant higher freight rates. I think the most conclusive argument in favor of the proposed increase lies in the fact that enterprise and capital that were constantly expanding and developing the railroad lines of the country have been driven from the field, and there will be little or no new developments until more liberal treatment restores enterprise to activity and enables it to attract capital from its hiding places.

B. F. Bush, President Missouri Pacific.

(2.) The advance in rates applied for will, if granted, affect only the Eastern railways representing 21 per cent of the mileage of the country and will afford no direct relief to the greater mileage lying in the Western half of the United States.

I think the higher rates should be granted, for it has been fully established that the existing rates do not yield revenues sufficient to enable the railways to meet increased expenses and give a fair return on the investment—such "fair return" must be forthcoming before railways can hope to borrow new money for the enlargement of facilities, improvements, or extensions necessary to properly conduct the constantly increasing traffic of the country.

The most conclusive argument for the increase ought to be the moral obligation of the Government to see that the thousands and thousands of small shareholders and bondholders who have risked their private means to help to build up an industry such as the railways, which confer untold comforts and benefits to the entire nation, should be protected and receive a compensation fully as great as would result from the employment of such private means in a less beneficial enterprise. There are few classes of industry that yield such small returns as do the railroads. The most convincing argument for the increase is that for want of means—for lack of credit in financial marts—the railroads are not able to keep pace with the business requirements. If this condition continues, the loss and injury to the entire country will be beyond reckoning; commerce and the many varied pursuits arising therefrom will surely languish, and the country will be a prey to hastening ills. On the other hand, it is our heritage, provided the resources at our command are wisely applied, to attain the commercial and economic supremacy of the world, with the attendant benefits of increasing the employment of our people and adding to our national greatness and prosperity.

E. Pennington, President, Minneapolis, St. Paul and Saulte Ste. Marie.

(2.) I see no reason why the Interstate Commerce Commission should not grant higher rates. The increased expenses and depression in business are certainly argument enough for it.

L. F. Loree, President, Delaware and Hudson.

(2.) I cannot undertake to say what the Interstate Commerce Commission will or will not do concerning the application for increased rates or any other matter. To my mind, all arguments in favor of the application are subordinate to the controlling ones, viz., the absolute inability of the railways, if the application should be denied, to meet the requirements of the public as to extension and improvements in their facilities.

A. H. Smith, President, New York Central.

(2.) From the evidence already submitted to the Interstate Commerce Commission, an advance in rates would seem to be imperative. In fact, the advance requested is nominal, compared with the needs of the properties and the needs and demands of the public for changes in transportation conditions. Many of the prevailing rates are those which were established as a result of protracted and ruinous competition, and later became legal when the rates were at extreme low tide. If the Government is to regulate, it must also protect, and permit the establishment of rates which are normal, and which will permit of safe and efficient service and the further development of the country. Every dollar that railroads spend for current service some one must contribute in the form of freight and passenger revenue. For several years the rates for service have been substantially stationary, and during that time very large increases have been made in wages and in the cost of material, the practical result of which is that what formerly cost the railroads $1 now costs the railroads $1.40, but they were permitted to collect only $1 throughout that period for the service rendered. It is common knowledge that wages and costs of materials of every kind have radically advanced during the past few years, and the farmer, manufacturer, and laborer have profited in consequence; yet during this entire time the railroads have been required to sell their commodity of transportation at a stationary price. The utter impossibility of continuing such a process is the strongest reason why changes should be made in rates.

Fairfax Harrison, President, Southern Railway.

(2.) I believe that the Interstate Commerce Commission must be impressed with the importance, not only to the railways, but to the business of the country generally, of permitting the railways to make adequately remunerative charges for transportation service. To my mind the strongest argument in favor of this is found in the fact that the railways of the United States are an indispensable part of the business of the country, and that the prosperity of the farmer, the manufacturer, the merchant, and all of the people is dependent upon railway net income being sufficient to attract the additional capital needed if the increase in railway facilities is to keep abreast of the increasing demand for transportation service.

F. H. Britton, President, St. Louis Southwestern.

(2.) Do not know what to expect—hope they will grant the increase. Railroads are unable to earn anything for improvements and betterments. As matters stand now they are earning barely enough to cover their fixed charges; transportation service must deteriorate unless the carriers are permitted to earn sufficient to meet their requirements in the way of additional facilities.

E. P. Ripley, President, Atchison, Topeka and Santa Fe.

(2.) I have ceased to guess what the Interstate Commerce Commission may do. Heretofore it has done little except to deny every request made of it by the railroads. The most conclusive argument in favor of the proposed increase is that two and two have, up to this writing, always failed to make five.

S. M. Felton, President Chicago Great Western.

(2.) I cannot give an opinion as to whether the Interstate Commerce Commission will grant the increased rates applied for by the railroads. In my opinion the most conclusive arguments in favor of the proposed increases are the enormous increases in wages paid railroad employes; the increased cost of materials and supplies; the demand made by the public for superior service, and the very heavy increase in expenses resulting from legislation, both national and state.

Daniel Willard, President, Baltimore and Ohio.

(2.) I do not care to venture an opinion as to the probable action of the Interstate Commerce Commission. I think, however, the best interests of the country at large would be served by the Commission granting the five per cent increase in freight rates, as requested by carriers in Offical Classification territory. I think the most conclusive argument in favor of the proposed increase is the statement of the financial condition of the railroads, as already submitted in connection with the rate case.

F. D. Underwood, President, Erie.

(2.) To forecast the decision of the Interstate Commerce Commission in the rate advance case is impossible. The most conclusive argument in favor of the proposed increases I know is, that the railways cannot go on, with the improvements necessary for the use and benefit of the public on their present net income. If the railways have no money to spend for enlargements, the damage to general business is apparent. The proposed rate advance of five per cent works no direct hardship on any class of the people; while it is an axiom that hard times for railways works a direct hardship on many classes of the people.

C. E. Schaff, President, Missouri, Kansas and Texas.

(2.) I hesitate to predict the probable action of the Interstate Commerce Commission with respect to rate increases. To my mind, the most conclusive argument in favor of an increase is the fact that it would tend to strengthen the credit of railroads and aid the companies in securing needed credit for improving and enlarging their facilities in order to properly care for the nation's growing traffic.

L. E. Johnson, President, Norfolk and Western.

(2.) Do you expect the Interstate Commerce Commission to grant higher rates? What, to your mind, is the most conclusive argument in favor of the proposed increases?

Yes. The most conclusive arguments in favor of the proposed increases are the statements that have been sent out by the railroads and the presentation of the matter before the Interstate Commerce Commission by President Willard, of the Baltimore and Ohio Railroad, and Mr. F. A. Delano, receiver of the Wabash Railroad, with the testimony presented to the Interstate Commerce Commission in connection with this case.

H. U. Mudge, President, Chicago, Rock Island and Pacific.

(2.) I expect the Interstate Commerce Commission to grant the request for higher rates. The most conclusive argument in favor of the proposed increase is the inability of the railroads to go on furnishing the kind of service that they have been furnishing in the past unless better rates are granted. Furthermore, the large number of men who are now out of work, and the large number that will be out of work before spring, due to the inability of the railways to purchase cars, rails, and other supplies, must, it seems to me, clearly indicate that the increase asked for would be more beneficial to the country than to the stockholders.

QUESTION NUMBER THREE.

(3) Is Government ownership of railways a possibility if the Government were to show continued reluctance to permit increased rates?

F. A. Delano, President, Chicago, Indianapolis and Louisville.

(3.) Government ownership is, of course, a possibility; but I believe that it is a long way off. It is quite conceivable that Government ownership might be a good thing for the investors and eagerly sought by them; but it is quite another thing to say that it is a desirable thing for the nation. For my part, I would be very sorry to see it. Nor do I think that Government ownership is called for unless we are ready to admit that the regulation of corporations is a failure. There is no more argument for the Government ownership of railroads than there is for the Government ownership and operation of every public service, and the number of corporations whose operations "are affected" (to use the language of the courts) "with a public use" is already large and constantly growing.

If the argument is made that Government ownership should come because public regulation is a failure, it is a curious reasoning to suggest that the same instrumentality that has made a failure of public regulation should be entrusted with ownership and operation.

Ralph Peters, President, Long Island.

(3.) Government ownership of railways is a possibility, but surely, when the people of the United States serously consider the proposition and its effect upon the general government as well as on the general condition of the entire country, they cannot but decline to undertake it.

B. F. Bush, President Missouri Pacific.

(3.) If there is to be no amelioration of conditions, it would seem that depressive regulation, if persisted in, will surely wreck the railroad properties, which will inevitably lead to an attempt by the Government to operate them as their owner. Undoubtedly, the people of this country are opposed to Government ownership with all the tyrannies and oppressions it may bring, and yet they appear to be approving those policies which will render *individual* ownership so unprofitable that it will become impossible. Railway service must inevitably deteriorate by lack of adequate means to maintain it, and these means cannot forthcome from the rate schedules now in effect. Increased business will not serve the purpose, for of late years the railways generally have been operated to the limit of their facilities and extra business over and above their limits entails a disproportionately high cost. Through diminished net returns due to unremunerative rates, the credit of most of them is so impaired that they cannot secure funds to increase their facilities or make necessary improvements. Neither can these be provided for out of surplus net earnings. If the people insist that the railway service to which they have been accustomed and to which the business of the country is adjusted should still obtain, or that a higher standard of service, to meet the exigencies and demands of trade and commerce, should be inaugurated, they must understand that such service can be furnished only through the ability of the investors who back the railways to pay the bills. Under the conditions which now govern and threaten I can conceive of no investing power, through private ownership, that would stand sponsor for the bills, and therefore, booting aside its direful complications, the corollary forces the conclusion that only through Government ownership can the bills for improvements be paid.

E. Pennington, President, Minneapolis, St. Paul and Saulte Ste. Marie.

(3.) I hardly think we will ever see Government Ownership of railroads. I have too much confidence in the intelligence of the American people.

L. F. Loree, President, Delaware and Hudson.

(3.) I do not look upon Government ownership of railways as a question of practical importance in this country at this time.

A. H. Smith, President, New York Central.

(3.) Government ownership does not necessarily follow immediately the reluctance of the Government to permit increased rates. Other resources might be the decrease in the class of service furnished, decreases in wages, and a retrograde movement in the development of the country. This is something which no one wants, and it is not believable that the American people will force the railroads to such an extremity to avoid bankruptcy. If the Government or any one can devise means by which the railroads can continue to render efficient service and borrow at reasonable rates the money required for expansion, the railroads would gladly adopt the methods.

Fairfax Harrison, President, Southern Railway.

(3.) I have great confidence that Government ownership and operation of the railways will never become a fact in the United States, but that there will be a general recognition of the principle that a prosperous railway system under private management, but subject to reasonable public regulation, is the best assurance of progress in public transportation service.

F. H. Britton, President, St. Louis Southwestern.

(3.) Yes.

E. P. Ripley, President, Atchison, Topeka and Santa Fe.

(3.) The Government has it in its power to first ruin the railroads and then buy them. Whether it proposes to pursue this policy I cannot say, not being in its councils. It is certain that the present condition of things cannot continue.

S. M. Felton, President Chicago Great Western.

(3:) To my mind, Government ownership of railways is a distinct possibility if the Government does not permit increased rates.

Daniel Willard, President, Baltimore and Ohio.

(3.) Government ownership is, of course, a possibility, and very likely will become a probability, if the railroads under private control are not able to provide the transportation facilities which the commerce of the country requires.

F. D. Underwood, President, Erie.

(3.) Government ownership is always attainable at its option. The question of rates now before the public has no bearing on the ultimate ownership of railways.

C. E. Schaff, President, Missouri, Kansas and Texas.

(3.) If the policy of Government, both state and national, which has obtained during the past five years, should continue, the condition of railways will become such that the public and the owners will demand Government ownership as the only solution of the transportation problem.

L. E. Johnson, President, Norfolk and Western.

(3.) Is Government ownership of railways a possibility if the Government were to show continued reluctance to permit increased rates?
I think not.

H. U. Mudge, President, Chicago, Rock Island and Pacific.

(3.) Government ownership is not only a possibility, but a certainty, if wages and all other commodities are to go up in price and the price of transportation remain stationary, or be reduced, as it is being done continually.

QUESTION NUMBER FOUR.

(4) Do you approve or disapprove of the Government's plan for physical valuation of the railroads?

F. A. Delano, President, Chicago, Indianapolis and Louisville.

(4.) I disapproved of it for a number of years, and finally gave my acquiescence to it because I regarded it as a public demand, and not because I regarded it as very desirable. I think that the public will be very much disappointed when it finds out how little has been accomplished by reason of the physical valuation of railroads. It is generally admitted now that it will be very expensive and will cost—depending on the methods adopted—somewhere from $5,000,000 to $10,000,000, half or two thirds of which will be borne by the railroads, and the remainder directly from public funds. The most that can ever be expected as a result of such a valuation will be to determine whether railroads are earning a net return on their physical valuation. Having determined this, it will still be impossible to tell whether rates as a whole should be advanced, or what rates should be advanced; and in some cases it would even be a matter of judgment as to whether by reducing some rates and improving methods, better results might not be obtained. The valuation of a railroad has never played any part whatever in fixing rates heretofore, and it cannot in the future, except in most general terms.

Ralph Peters, President, Long Island.

(4.) I approve of the general plan for the physical valuation of the railroads. A fair valuation will make the people realize how much better off they are, and how much more has been done for them by the tremendous investment of private capital in the business of railway transportation. We are fully co-operating with the Commission in their efforts to secure a true valuation of the railroads.

B. F. Bush, President Missouri Pacific.

(4.) I cannot see that the Government physical valuation plan, when consummated in five years or more, will meet the expectation of its framers. It certainly imposes a burden upon the Government and the railways of many millions of dollars, and in this way will be a vast economic waste. If its design is to predicate the rates that shall be charged upon the valuation determined, I bespeak for it complete failure. Individual rates, on the thousands of commodities carried by railways in varying quantities varying distances, never have so long as the existing inexorable conditions affecting national and international commerce remain in force. Besides, the billions of varied rate transactions yearly would render impracticable any plan having for its object a fixed mathematical relation of one rate to the other or to the valuation of the property when determined, as is contemplated by such an impracticable scheme.

After a careful study of the subject by competent authority, it is generally conceded now that the value of the physical plants of the railways is much in excess of that represented by the securities outstanding, yet the rates permitted are not sufficient to yield a fair return on such undervalued securities. The chief objection to this physical valuation plan, however, is the enormous expense it will entail by reason of the work required by the Government to aid it in determining the valuation, without compensatory or other benefits of any character to the railways.

S. M. Felton, President Chicago Great Western.

(4.) I do not approve of the Government's plan for physical valuation of the railroads; first, because it places the burden of a large portion of the expense upon the railroads; second, because it is a debatable question whether the physical valuation when made under the plan promulgated by the Interstate Commerce Commission will represent a fair value of the property, and the time it will take to make these valuations will render the figures of doubtful value, owing to the fact that it will be impossible to bring them down to date.

Daniel Willard, President, Baltimore and Ohio.

(4.) Probably, upon the whole, it is a good thing to have a Federal valuation of the American railroad system. Undoubtedly, it will show that the railroads are not only worth as much, but more, than their existing capitalization, when considered as a whole. I do not expect, however, that the railroads will be permitted to advance their charges, because of that fact; and, if I am right, nothing will be gained by a physical valuation to use as an argument for reduced rates. The task is enormous, and will cost a large sum of money, and, as I view it, will be of no practical value when finished, beyond the fact that it will without doubt dissipate the belief which seems to exist in many quarters that American railroads as a whole are over-capitalized.

F. D. Underwood, President, Erie.

(4.) Physical valuation of railways as a basis for taxation is not essential:

First: For the reason that their physical value is a varying thing. By the time the valuation is completed, it will be obsolete. As a taxing basis the physical or intrinsic value of a railway should not be a governing factor.

A better basis for taxation is a percentage of the gross receipts. The data for this method are already in the hands of the state and federal authorities and are simpler, quicker, and a fairer plan of producing revenue than by the roundabout, laborious one of physical valuation.

Second: As a rate-making basis, it is superfluous, the rate-making power being now in the hands of the several state commissions and the Interstate Commerce Commission. Rates by all lines are the same, regardless of their individual costs or value, all the communities now being (or to be) on the correct basis, i. e., what the traffic will bear; the cost or intrinsic value of the transportation machine is irrelevant.

C. E. Schaff, President, Missouri, Kansas and Texas.

(4.) The plan for Federal valuation of railways is not objectionable. I doubt whether the result will justify its great cost, but it is certain, at any rate, to put at rest the charge so frequently made by persons ignorant of the conditions that American railways are over-capitalized.

L. E. Johnson, President, Norfolk and Western.

(4.) Do you approve, or disapprove, of the Government's plan for physical valuation of the railroads?

We are working in harmony with the Government in the plan for the physical valuation of the railroads. Time only can tell whether it will be beneficial or not.

H. U. Mudge, President, Chicago, Rock Island and Pacific.

(4.) I neither approve nor disapprove of the Government plan for valuation of railways. It is conceded by every authority that if such valuation were to have any effect on rates, it would necessarily increase them, but it will have no bearing, because the great difference in the physical cost of competing lines precludes any possibility of fixing rates on such valuation. The only objection to it from the railway standpoint is the expense of making such valuation.

E. Pennington, President, Minneapolis, St. Paul and Saulte Ste. Marie.

(4.) I cannot see where the physical valuation of railroads is going to be of any benefit to any one. I do not see how it can be used for rate-making or for taxes.

L. F. Loree, President, Delaware and Hudson.

(4.) The results of the Federal valuation of railway property now in progress will undoubtedly serve the useful end of effectually refuting the charges of over-issuance of securities that have passed current for so many years. They will show that the real value largely exceeds the aggregate par value of all outstanding securities. The valuation, however, will furnish nothing of assistance in the determination of reasonable rates, if only for the reason, among others, that the public would not concede the large increases that would have to be made in order to enable many lines which perform necessary services to earn the confiscatory minimum rate upon their values, as disclosed by the inquiry.

A. H. Smith, President, New York Central.

(4.) The Government plan for a physical valuation of the railroads appears to be not thoroughly understood at the present time. The act provides, apparently, that the original cost shall be ascertained. This appears to be difficult, if not impossible, because the present railroad systems are consolidations of thousands of small companies, the identities and construction data of which have been largely lost. There is, therefore, no probability of ascertaining the original cost of the properties as now constituted. Again, the act provides for an estimate of the cost of reproduction of the present properties, with depreciation, etc., all of which involves many assumptions as to the conditions which surround the railroads and which the railroads themselves have created. The investigation, however, in its entirety, we believe, will tend to show that the railroads as now constructed are of far greater value than the present par or market value of the securities they have issued, and this conclusion we believe will be beneficial, because it will restore confidence in the integrity of railroad investments.

Fairfax Harrison, President, Southern Railway.

(4.) The proposed Federal valuation of the railways, if made on a fair basis, should have the effect of correcting the widespread mistaken assumption as to a disproportionate relation of the capitalization of the railways of the United States, as a whole, to their value.

F. H. Britton, President, St. Louis Southwestern.

(4.) Approve physical valuation plan, as I believe the results will show that the railroads are entitled to an increase in freight and passenger rates.

E. P. Ripley, President, Atchison, Topeka and Santa Fe.

(4.) I can see no possible good in spending twenty millions of dollars for the sake of finding out something which is not worth finding out, and the knowledge of which, even if correctly ascertained, could have no possible use except to demonstrate that the present capitalization of the railroads is under rather than over their cost. But of what use is such a demonstration if the Government is to purchase the properties, or of what use is it in either case?

QUESTION NUMBER FIVE.

(5) What special points impress you as favorable or unfavorable in the railway situation?

F. A. Delano, President, Chicago, Indianapolis and Louisville.

(5.) The railroad subject has been thoroughly gone into in recent years, and no case has been so fully presented before the Commission as the present rate advance case. It has been a campaign of education and it seems probable that a better understanding of many problems will result from this thorough ventilation of the subject. From this I confidently hope that with this better understanding of the question will come a fairer treatment.

Ralph Peters, President, Long Island.

(5.) The special point that impresses me as favorable in the railway situation is the fact that the press is beginning to realize the seriousness of the situation, and is trying to give the truth and the honest facts to the public. When this is done, and the public understand and appreciate the real condition, the railroads will get fair play.

B. F. Bush, President Missouri Pacific.

(5.) The unfavorable are outlined in the foregoing. The favorable are found in the appearing evidences of the growth of a broader, fairer and saner public sentiment toward the railroads. It is hoped that this may—indeed, I am persuaded that it will—expand and culminate in such Governmental action as will relieve the railways from the hardships under which they are now laboring, and thus disperse the lowering cloud which presages embarrassment to many of their properties, to the commerce of the country, and to the peace and welfare of our entire body politic.

L. F. Loree, President, Delaware and Hudson.

(5.) The justifiable apprehensions of railway officers are based upon continued legislative action in violation of the fundamental rule that economic control and economic responsibility must be united. The progressive separation of these elements under laws taking from the owners of the properties more and more of the degree of control over rates and operating methods which ownership formerly implied, though these owners must still accept all losses resulting from insufficient rates, unwarranted increases in wages, or the employment of an excessive number of men, seems to be unwise from either the economic or the political point of view. The lack of public protest against the immoral actions of the Postoffice Department, under which the railways have been forced for years to carry the mails at ruinously low rates, and, more recently, to take over the transportation of the parcels post traffic, with compensation for only a beggarly fraction of its total, points to a disregard, when railways are concerned, of ordinary principles of fair dealing and common honesty that is not less than ominous.

Daniel Willard, President, Baltimore and Ohio.

(5.) This question cannot be properly discussed within the proper limits of this communication.

F. D. Underwood, President, Erie.

(5.) One of the unfavorable features in the railway situation is the forced employment of superfluous men. This fact should not be confused with that of wage advances. Wage advances are not an unmixed evil; superfluous men on railways are. Demoralization, with resultant poorer service to the public, from the evil of idlers, especially in railways, is an obvious fact.

The public is hurt when non-essential men are kept on, and essential men, necessary for the better conduct of the business, are laid off. This is unfair at the start, and will in the end lower the efficiency of railways. Pressure of public opinion, exerted through its chosen representatives, presents the only way in which it can be remedied.

C. E. Schaff, President, Missouri, Kansas and Texas.

(5.) To my mind, the favorable feature in the railway situation is that people are discussing it with greater understanding and with more apparent fairness. The specially unfavorable feature is the inelasticity in railroad operation enforced by the requirements of law and the demands of the public for service and of labor organizations for wages and working conditions, which make it almost impossible for railway managers to adjust their expenditures to declining earnings.

L. E. Johnson, President, Norfolk and Western.

(5.) What special points impress you as favorable or unfavorable in the railway situation?

The special point unfavorable in the railroad situation is our inability to earn a sufficient amount of money to meet the requirements of the public, increased taxes, and demands of labor.

H. U. Mudge, President, Chicago, Rock Island and Pacific.

(5.) There are no special points that seem to be decidedly favorable in the railway situation, although the fact that thinking people are beginning to take some interest in the subject is a favorable sign for a more constructive policy toward the railways. Business men and shippers are beginning to see that the policy of "revenge" for the past sins of the railways is not getting them what they need.

A. H. Smith, President, New York Central.

(5.) The favorable points in the railway situation appear to be that the railroads and the people, as represented by the Government, have no widely divergent opinions as to railroad regulation. The major portion of the national regulations thus far enacted has upon the whole been helpful. Further national regulation as to the purposes for which securities shall be issued, and as to the application of their proceeds, might be helpful, not only from the public's and investors' points of view, but also as tending to avoid conflicting views of the various existing state commissions. Such questions, for the common good, it would seem, might be disposed of by mutual discussion between the railroad operators and the Government, and thus avoid further political discussion of railroads, which is causing many misunderstandings and misgivings.

The American railroad is the second largest factor in the industrial wealth of the country. It pays the highest wages and gives the best service at the lowest price of any extensive railroad system in the world. The continued prosperity of this country must depend largely upon a continuation of this efficiency, which is utterly impossible without the good will and co-operation of the people and the Government. In the end it is believed that the American people have too high a sense of fair play and too much commercial foresight to permit any other policy to continue long.

Fairfax Harrison, President, Southern Railway.

(5.) In my opinion the most unfavorable factor in the railway situation is the tendency of railway-operating costs to increase more rapidly than revenues. On the other hand, the most favorable factor in the situation is the growing appreciation, on the part of the general public, of the universal interest in the railways and of the economic necessity for such a relation between railway earnings and operating costs as will enable the companies to provide increased facilities as they may be needed.

F. H. Britton, President, St. Louis Southwestern.

(5.) See nothing especially favorable—the situation in general might be called unfavorable.

E. P. Ripley, President, Atchison, Topeka and Santa Fe.

(5.) There is little that is favorable except that the rigid rules laid down by the Interstate Commerce Commission have, to a certain extent, done away with some of the wastefulness of competition; there still remains much waste, due to the crudities of the law itself, which attempts to both force and forbid competition among the carriers.

S. M. Felton, President Chicago Great Western.

(5.) The only point in the railway situation that impresses me favorably to-day is the growing disposition of the public toward fair treatment of railroads.

Fundamental Principles Touching Upon the Proposed Advances in Freight Rates

By William A. Robertson,
Of the New York Bar.

NO proceeding that is now pending in the United States—be it legislative, executive, judicial or diplomatic—is nearly so important to the general welfare as the application of the trunk lines for permission to make a moderate advance in thteir freight rates. Even the Mexican situation is far inferior in real importance to the questions raised before the Interstate Commerce Commission by President Willard, of the Baltimore and Ohio Railroad, and his colleagues. In saying this, we do not exaggerate a particle, because no situation that Mexico seems likely to create for us, short of war, can be measured against the necessity that our great highways of commerce shall be able to develop and expand, at the same rate as the business of the country. As for an actual war with Mexico, we need hardly be uneasy; for it is manifest that President Wilson has, very wisely, both the desire and the ability to prevent it. With good reason, then, do we assert that the rate question concerns our true interests far more deeply than Mexico.

It is not the purpose of this article to anticipate or to summarize the usual statistical facts and arguments in favor of the contentoin of the railroads. It rather seeks to draw attention to some aspects of the rate situation which are general and fundamental, and which do not involve an inquiry into the minutiae of rate-making. We particularly wish to emphasize the following:

1.—The Power to Forbid Rate Advances Is an Experiment in American Federal Legislation.

That portion of the Act of June 18, 1910, (the Mann-Elkins Act) which allows the Interstate Commerce Commission to suspend or forbid an advance in railroad freight rates is a novelty and more or less an experiment in the legislation of our Federal Government. We believe that it represents the first attempt to directly control the price of a commodity.*

William A. Robertson.

We use the term "commodity" advisedly, for transportation—the ability to move goods from one place to another—is quite as much of a commodity as gas or electricity. To be sure, it is as impalpable as either, but in its results it is as solid and obvious as a ton of pig iron or a bale of cotton. That the cotton was at Mobile last week, but is at Fall River to-day, is not an abstraction or a theory, but a very solid and undeniable fact, obvious to the dullest of intellects. The ability to move the cotton from Alabama to Massachusetts is almost as important as the cotton itself. Each one is a commodity, in a true sense.

Three years ago, our general Government decided that it would extend its control over the price, not indeed of the cotton, but of the labor which moves it across the country. If we overlook a few rare and occasional statutes, passed in time of emergency,—such laws as those which sought to regulate sales of gold during the Civil War—we shall find that the United States Government has never before sought to directly and arbitrarily fix a maximum price for an article of trade. The Act of June 18, 1910, must therefore be considered an exception to the spirit and policy of more than a century of legislation. It imposes an absolute bar and prohibition upon the doing of that which, in all other branches of industry, is the natural and unchallenged right of the humblest pedler or huckster, i. e., the right to charge whatever he sees fit for the wares he has to sell.†

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*In one sense, our various tariff acts may be said to have affected prices of certain lines of merchandise. Such control, however, was entirely indirect, the price of an article being still subject in a great degree to market fluctuations. The effect of the Mann-Elkins act, however, is to create a hard and fast maximum limit, above which the price of transportation shall not go, unless with the consent of the United States Government, represented by the Interstate Commerce Commission.

It seems fair, therefore, to call it experimental legislation, since it covers a new and untrodden road, the outcome of which is yet to be seen.

2.—The Refusal to Permit an Advance in Rates Is Not Subject to Appeal or Review.

In the second place, this great power which the Commission possesses over the railroads is one that is not practically, subject to any appeal or review. The seven gentlemen who compose the Interstate Commerce Commission wield an authority far greater, for certain purposes, than many a prince or potentate. Should they say "no" to the petition of the railroads, they say it with the knowledge that there is no tribunal in the land which can reverse them and say "yes." But it is otherwise if they allow the desired advance; for such an allowance is not a final adjudication of the propriety and reasonableness of the new rate. Any shipper who might be dissatisfied with such rate might contest it before the Commission in the same manner in which he might contest any existing rate.

3.—The Absence of Definite Rules by Which to Judge of the Reasonableness of an Advance in Rates.

Again, the law does not lay down any clear or well-defined set of rules by which the Commission is to be guided in determining whether it shall grant or deny a petition for an advance in rates. On the contrary, it is perfectly well-known that there are many and complex elements entering into the question. The weight and importance to be attached to each element is something about which it is easy to differ, so that, practically, the whole subject of rate advances rests entirely within the discretion of the Commission. Unlike a suit in law or equity, there are few rules that can be invoked as precedents, to act as finger-posts and point the way out of the woods, and swamps of doubt and confusion, and on to the highway of progress and prosperity.

Now, do not all these things create the very situation where a wise tribunal will be disposed to make very sparing use of its great and extraordinary powers? A law that is new and experimental should surely be applied with caution. Especially should this be done in the case of a statute which undertakes to control prices. Every argument based on history, experience and common sense suggests that such a vast and far-reaching power should be exercised reluctantly. It is an "*emergency*" power, only to be invoked in a clear case of abuse—a case of real emergency calling for sudden and effective restraint. As wise men and as readers of history, the Interstate Commerce Commissioners doubtless know that no government in the past has been strong enough or wise enough to permanently control the price of any commodity of importance. Whenever there has been an attempt on any large scale to exercise such control, and to make the price something quite different from what it otherwise would be, there has been either a flat and mortifying failure, or else a successful evasion, or, in the last analysis, an arrested development of the particular trade or industry affected by the regulation. Indeed, we know of but one government in modern times which was able to enforce price regulation at all, and that only for a limited time. We refer to the notorious Committee of Public Safety during the French Revolution. By acts of the purest tyranny, it did indeed compel the Paris shopkeepers to sell goods at prices fixed by the Committee. Its methods, however, were intolerable, and need not here be considered.

It is quite possible, however, that, to some, the course of action now advocated may seem too moderate, even tame and weak. If so, let such critics forget for a moment about railroad freight rates, and imagine that the question at issue before the Interstate Comerce Commission was the propriety of an advance in the price of steel or cotton or wheat or potatoes. Would it not at once become apparent that no one of these commodities stood alone, but that it carried with it a dozen other questions! Take, for instance, the question of what would be or should be a "*reasonable*" price for a bushel of wheat. Apart from the actual price of wheat in the markets of the world, would it not be neecssary to consider such questions as the cost of farm land per acre, the cost of fertilizer, the cost of plows, harvesters, reapers and threshers, the wages of farm laborers, the rate of interest on money, etc., etc.? Now, if the Commission had no control over the price of any of these things, but its authority was confined to the one question of the approving or forbidding an advance in the price of wheat, is it not clear that the wise course for the Commission to adopt would be to refuse to interfere at all, unless the proposed advance in wheat was manifestly unreasonable or extortionate? If the Commission assumed to forbid a moderate advance, it might very well happen that, being unable to control the cost of the many elements that enter into the production of wheat, its refusal would place the wheat farmers at a disadvantage compared with other lines of industry, and this in turn would check the production of wheat generally. In other words, the prices of all commodities are so closely related and so inter-dependent upon one another, that no government can safely interfere wth one without risk of checking the growth and development of that entire line of industry. The action of the Government should be invoked only in a real emergency, and to prevent an irreparable injury growing out of a manifestly unreasonable and extortionate advance.

4.—The Railroads Should Not Be Forced to Prove Their Case Beyond a Reasonable Doubt.

It is earnestly to be hoped that the Commission will not require the railroads to prove the propriety of the desired advance in rates beyond every reasonable doubt. The law simply says that the burden of proof shall be upon the roads, and a fair preponderance of proof is all that should be required. If any other rule be adopted, it is doubtful whether, considering the number and complexity of the questions involved, it would be within the ability of any man to overcome the multitudinous and often captious, though plausible, objections which the self-interest or selfishness of the shippers or the public may suggest. Suppose again that, instead of the railroads being the petitioners, the farmers of the country were obliged to ask permission to raise the price of wheat, corn and oats. What a storm of protests and objections would be made! Would we not hear much about the high cost of living, and would we not be told that the price of the people's food —the very staff of life—should not be increased, that multitudes simply could not pay an enhanced price, etc.? In particular, would not eager objectors claim, with much reason and force, that American farms are not wisely managed, that farmers are wasteful and unprogressive, and that enormous economies could be practised, if the farmers would but do so,—economies which would render the proposed advance in the price of grain altogether needless? Would we not be reminded that, in the United States, with its almost virgin soil, the average annual yield is only about 14 bushels of wheat to the acre of ground against old England's 32; that in oats the United States produces an average annual yield of only 23.7 bushels against England's 42 and Germany's 46? All this and much more would be urged against the farmers as they stood at the bar of the commission pleading for permission to raise their prices of grain. In fact, it would probably be impossible for them to make out a case, if they were required to fairly prove every inch of their way.

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†The power to suspend or forbid rate advances may perhaps best be compared with our usury laws. These are attempts on the part of our State governments to fix a maximum charge for the use of money. How far they have accomplished their purpose is an interesting question.

And would not this condition of affairs be substantially true,—at least, in part,—of almost every important industry in our land? Is not everyone of them somewhere open to criticism so that, if it were compelled to make an absolute demonstration of its right to an advance in prices, before such advance could be actually put in force, it would probably fail in the attempt, and would have to submit to a Scotch verdict of "not proven"?

Indeed, our American railroads are by far the most efficiently and economically managed industries in the country. They are not faultless, but they have been subject to such vigilant public criticism and such drastic legislative control in the last fifteen years, that they are probably much less open to attack than the average industrial or agricultural concern.

But it may be objected that if all this is so, it is but an argument against any advance in prices in any line of industry. Should anyone view it in this light, it is but necessary to remind him that our Government has very wisely refrained from attempting so vast and impossible a task as the general control of all prices, including the price of that element which enters so largely into every finished article,—labor. The great world of business, outside of the one industry of transportation by rail, is left free to regulate prices as it sees fit, subject only to existing business conditions and the laws of supply and demand. The country has achieved its industrial progress in its own way, not according to logic, but in response to the varying needs and opportunities of the times. Its growth, like all true growth, has been spontaneous, and not by rule.

But if a rule is to be applied to the railroads, quite different from anything heretofore known, and different from that by which all other industries proceed, then the position of the railroad business is at a manifest disadvantage. Is it to be compelled to justify, by a most rigid test, every advance which it seeks to secure in its rates? If so, we must expect to see the development of the railroads lag behind the country in general. Capital can not be attracted to an industry which is under some special disadvantage, unless there be some great and effective compensation, as an offset. The very merchants and manufacturers who, in 1910 and 1911, appeared at the bar of the Interstate Commerce Commission to object to the contemplated advance in freight rates, as then proposed, could not, in all probability, have justified the advances which they themselves had made in the prices of their own commodities in the preceding ten years, had they been forced to undergo the same rigid scrutiny, and the same exacting tests of economy which they were so keenly anxious to apply to the railroads. They would have been embarrassed by the old rule—"With what measure ye mete, it shall be measured to you again." Yet this is a rule of the very highest authority, and lies at the basis of all our American law, which seeks the ideal of equal treatment for all.

Of all the many powers vested in the Interstate Commerce Commission, none calls for more delicate handling or more unerring judgment than the power to suspend or forbid advances in freight rates. Upon the wisdom with which the Commission discharges this great task, rests the success or failure of the whole plan to regulate commerce. For our own part, we believe the present Interstate Commerce Commission is fully equal to the occasion, and will rise to the great opportunities which are before it. But the eyes of all the country are upon it—railroad men, shippers, manufacturers, investors, statesmen, economists and calculators. All are watching earnestly. Indeed, in a certain sense, the Commission itself is on trial, for there can be no greater or more searching test of any man or body of men than their use of power. And the true test of power is the test of time. Beyond the exigencies and expediences of the passing hour is the question of how far a rule of action will stand the test of years—how it will work as the country advances and progresses. "Time is the old justice that tries all men."

"Knockers"—Attention!

IF you work for a man, in Heaven's name WORK FOR HIM. If he pays you wages that supply your bread and butter, work for him; speak well of him; stand by him and stand by the institution he represents. If put to a pinch, AN OUNCE OF LOYALTY is worth a pound of cleverness. If you must vilify, condemn and eternally disparage, why, resign your position and, if you are a weakling, when you are outside damn to your heart's content; but as long as you are a part of the institution, do not condemn it. If you do, you are loosening the tendrils that hold you to the institution, and the first high wind that comes along, you will be uprooted and blown away, and probably you will never know why, as many have experienced."—Elbert Hubbard.

Where Do Our Railroads Stand?

REMARKS OF IVY L. LEE, EXECUTIVE ASSISTANT, PENNSYLVANIA RAILROAD COMPANY, BEFORE PITTSBURGH TRAFFIC CLUB, DECEMBER 8, 1913.

EDITOR'S NOTE.—Owing to the non-receipt of the full copy, it was only possible to publish in the December issue a brief abstract of the following interesting statement. Mr. Lee's summary of the increased burdens which the roads are now compelled to carry and which have resulted in enormously increasing their operating expenses, is most impressive. He refers particularly to the additional expenditures caused by floods, increased wages, higher taxes and expensive legislation and regulation, all of which are developments over which the railroads have had no control.

My topic is "Where Do Our Railroads Stand?" This topic was of my own choosing, but after having suggested it to your committee and thinking the subject over, I have come more and more to the feeling that our railroads are not standing at all. They are more in the condition of a prize fighter who has been knocked down and over whom the referee has already begun his count. We see signs of animation in our gladiator and there is every indication that he will come back and be ready for more rounds. But there are also numerous signs that if he continues to receive the same kind of jabs, upper-cuts and solar plexus blows which lately have been so freely thrust at him, the occasion may rise when his reserve strength will have been exhausted.

Those of you who have ever attended a prize-fight will remember that uncanny—almost demoniacal shout of delight which seems to go forth from the crowd when the "mixing" is most furious and a "knockout" is imminent. So, too, we seem to have been hearing sounds indicating the exultation of the unthinking at the plight of the railroads. We read in some of our magazines expressions apparently enthusiastic that now has Daniel come to judgment, that our railroads are but debris, demoralized wrecks of departed confidence, and that Government ownership should be availed of immediately to save our people.

We who listen to these extraordinary outbursts cannot but wonder at the apparent absence of reason and lack of understanding which is thus displayed. So far as we can learn, about the only basis for this strange destructiveness seems to be the fact that at some time in the past the crowd knew that this railroad champion had sown some "wild oats." For, to drop the metaphor, I feel safe in saying that no business in the United States is to-day conducted with greater regard not only for the requirements of the law but for the fundamental dictates of honesty and decency than that line of public service to which railroad officers are devoting themselves.

I.

BURDENS FROM WHICH RAILROADS SUFFER.

Let us consider some of the blows which are being aimed at the body of this champion who is, as I conceive it, fighting for public prosperity:

Floods.

1. The most recent, but none the less serious of these destructive forces was the flood of last spring which cost the railroads some $12,000,000, and which caused a charge of upwards of $4,000,000 against the revenues of the Pennsylvania Lines. This sudden invasion upon our property had to be met out of that surplus which it should be the part of every well managed railroad to have available, and yet the accumulation of which is made increasingly difficult by the tendency of present-day legislation.

Increasing Wages.

2. Wages are constantly going up. If the railroads which are now seeking to increase their freight rates had employed the same number of men in 1910 as they did in 1913, the wages paid by those particular companies in the latter year would have been greater by $48,000,000 than in 1910. The companies of the Pennsylvania Railroad System paid out last year $189,000,000 in wages; and the rates of pay for last year were upon a basis 37 per cent higher than those which prevailed in 1901. While believing that railroad employes should be liberally paid, we have an equal obligation to insure proper and equitable treatment to all classes of employes. The effect of some of the wage arbitrations, however, which have recently taken place, has been to create an unwarranted disparity between the wages of different classes of employes by making additions to wages already unduly high and rendering difficult if not impossible proper treatment for employes as a whole.

Taxes Going Up.

3. Not alone wages, but taxes also are mounting upwards. The taxes for the companies in the northeastern quarter of the United States have increased 111 per cent in the past ten years. In this manner the railroads not only suffer the brunt of the increasing costs of their own operations, but they must share a large portion of the constantly increasing expenses of our agencies of government.

Expensive Legislation.

4. Not alone must these increases in wages and taxes be met, but our railroads are shouldered with a mass of legislation the result of which is to augment the expenses of operation. Extra crew laws loom large in this category. These laws have not only added some $6,000,000 to the cost of operation in the states which have them, but, worse than that, they have imposed upon the railroads an obligation to employ a large number of men who are not needed for either the safe or the efficient operation of trains. A short time ago, while journeying between Richmond and Indianapolis, walking through a sleeping car I saw the conductor of the train sound asleep. This was in one of the extra crew law states. The train was one which made very infrequent stops, and it was quite evident that the conductor did not have enough to do to keep him awake.

We have grade crossing laws such as that recently passed in the state of New Jersey, imposing upon the railroad the entire burden of the cost of removing a grade crossing; and yet, if the grade crossings on the Pennsylvania Railroad alone in the state of New Jersey had to be removed at once, the cost would be at least $60,000,000.

Let me not be understood as protesting against any of this legislation. All of it may be highly desirable; but that it is expensive and that the expense must be met from some source there certainly can be no question.

II.

WHY THE BURDENS ARE SO HARD TO CARRY.

Faced with the necessity for meeting such expenses, the railroads nevertheless find themselves surrounded by many anomalous conditions which prevent normal treatment of the situation. You will remember that when Gulliver was shipwrecked on the shores of Lilliput, the little inhabitants of that country bound his arms and legs with ligatures which made difficult his freedom of movement. So we find that our railroads have been bound around with certain ligatures which, to return to the figure of the prize-fighter, make it impossible to dodge or to ward off the blows which have caused his dismay. Such ligatures are:

Different Tribunals for Wages and Rates.

1. The fact that the tribunals which settle the wages which we shall pay to our men are not the same as those which have jurisdiction over the rates we shall charge for our services. If a railroad brings to a commission a statement as to its increased payments for wages there is nothing whatever in law or in logic to prevent such commission from saying that such a schedule of wages is unwarranted and that upon the general public ought not to be imposed the burden of paying for it.

Federal and State Conflicts.

2. The fact that state legislatures may enact measures imposing increased expenses and yet by reason of the inter-relationship between state and interstate rates, the national government, through its control over interstate rates, in effect if not in act prevents an increase of rates to meet the expenses incident to carrying out the legislation of individual states.

Compelled to Compete and Not to Compete.

3. We are compelled by the Sherman Act to compete; and yet, under the Hepburn law, in substance forbidden to compete with other railroads. The Hepburn law, by requiring us to file all rates thirty days before they become effective, practically insures that the rates over all railroads between two points shall be the same. This same law forbids all discrimination by one railroad or a group of railroads against individual shippers, classes of shippers, or communities. Thus though competition in all respects save service is effectually prevented, and though we are subjected to the most rigid regulation, the national Congress, in spite of the recommendations of two Presidents of our country, still refuses to permit competing railroads to make legal agreements with one another. The situation of the railroads in this matter may not be inaptly compared to that of the little girl, who, being told to learn to swim, was yet adjured by her mother:

"Now go, my darling daughter,
Hang your clothes on a hickory limb,
But don't go near the water."

The natural result of competition is the survival of the strong. And yet if in practice competition results in the crippling of the weak, the result is not considered desirable. We are told that there should be competition between railways and waterways, and yet if in practice we find that even with their cheaper rates the waterways cannot meet the competition offered by the superior service of the railroads, and the waterways in consequence languish, we are told once more there is something wrong with the character of the competition.

Conflict Between Law and Business Custom.

4. The railroads are constantly urged to consider business interests, and to adjust their dealings to the commercial needs and habits of the people; and yet they are often compelled by law to do uncommercial things. If a Pittsburgh lumber dealer undertakes a contract, with prices based upon a rate quoted to him by a railroad rate clerk in Pittsburgh, and it is later found, after delivery of the lumber, that the rate was, in the utmost good faith, quoted inaccurately, the legal rate must nevertheless be collected, even if it should mean the bankruptcy of the lumber dealer. This situation has been met in the Pennsylvania public utilities law:

> "Article III, Section 7, paragraph (a)—"Whereas, as the result of a bona fide mistake or error of a common carrier, the full tariff charges are not collected in the first instance, and the balance is subsequently found to be due and outstanding, the collection of such balance may be waived by the carrier, provided the matter is submitted to the commission, and its approval of such waiver is first had and obtained."

but is still controlling with reference to interstate shipments.

Pressure is continually being exerted urging railroads to pay all claims promptly; and yet there is constant risk that the inadvertent payment of an unwarranted claim may result in an indictment charging the payment of a rebate.

Demand for Passenger Service and Low Fares.

5. There is a continuing demand for improved passenger service, for both speed and safety in the operation of trains, and for greater comfort and cleanliness in the equipment provided. Yet a large number of states have passed laws restricting passenger fares to a maximum of two cents a mile, with but little consideration given to whether that sum is fair payment for the character of service demanded.

Contradictory Local Demands.

6. We are often between two fires presented by contradictory local demands. There is at many points, for instance, a very strong sentiment that railroads should provide switching from the lines of one company to another at nominal rates. There is at the same time a demand for improved terminals. The point is almost invariably over-

looked that if the existing terminals of a railroad are not to be protected against use without full compensation, the very strongest incentive is immediately removed for that carrier to expend additional capital in improving its terminals.

Inadequate Pay for Carrying the Mails.

7. The railroads are in a strange dilemma with reference to the transportation of the mails. The Supreme Court of the United States has declared that the railroads are not compelled to carry the mails. And yet if they do carry them, they must do so at rates and under rules laid down by Act of Congress. No thinking man will fail to realize immediately that the railroads could not seriously consider refusing to transport the mails. The inconvenience to the public would be so great that no railroad company could assume the responsibility for causing it. If the railroads were compelled by law to carry the mails, and they then found that the rates fixed by Congress were not compensatory, the companies would have some standing before the courts in claiming that their property was being taken without just compensation. But under the law as it stands they must, in deference to public opinion and public convenience, accept as nominal free agents contracts with the Postoffice Department to carry the mails upon terms established by Congress. They have no standing before the courts, and their only appeal for adequate payment lies to public opinion.

This is the day of enlightened public opinion, and we are all impressed with the point of view from which all matters of business and social conduct are being regarded. Righteousness is these days receiving an emphasis certainly without precedent in our time, and the Government is interposing continually to insure that righteousness shall prevail in the treatment of the people by incorporated capital.

I should like to lay before you, however, a chain of facts in this matter of the compensation paid by the Government for carrying the people's mails, and leave with you the question as to whether, in these, are embodied practices comporting with the highest ideals of righteousness.

Our Government instituted the parcel post January 1st, 1913. Notwithstanding the fact that this parcel post was expressly designed to provide a service which would compete with that of the express companies, and that from this express traffic the railroads received a portion of the revenue, no provision whatever was made to pay the railroads for carrying the burden of this parcel post for the first six months. After the first six months it was provided that the Postmaster General could pay not exceeding five per cent to those railroads upon which the mails had not been weighed between January 1st and July 1st, to compensate them for carrying the parcel post. At the time such provision was made the weight limit of the parcel post was 11 pounds. On August 15th, however, without further provision for compensating the railroads, the weight limit of the parcel post was extended to 20 pounds. And still with no provision made for the compensation of the railroads for the additional burden which they must carry. The weight limit is on January 1 to be further increased to 50 pounds without any action before then to pay the railroads for carrying the additional weight. And it was stated in newspaper articles sent out from Washington a few days ago that the only complaint which had been made against increasing the weight limit of the parcel post came from the railroads!

The situation is described perhaps with exaggeration, but vividly, by a narrative I heard recently of a man who had wished to forward a small package. He found that the charge for carrying that package by freight would be 25 cents, by express 26 cents, and by parcel post 24 cents. The man reflected that of course the principal portion of the journey which that parcel was to have would be by railroad, and he therefore took occasion to inquire what payment the railroad itself received for carrying that package by each of the respective methods. His conclusions he thus stated:

"I found that in the case of freight the railroads received the whole of the revenue; in the case of the express, they received half of it; and in the case of the parcel post, they received none of it."

Public opinion has for many years past seemed to make it popular for postoffice officials and others to consider only the convenience and immediate purposes of the Department, rather than the question of insuring that fair payment should be made to those carrying the mails.

And, for the present, the fact remains that the mails are being carried without adequate compensation, and the parcel post is adding to the burdens of the railroad and at the same time depriving them of a source of revenue which they previously enjoyed, and in return for which they rendered a valuable service. The parcel post is all right and the people should have it, but any reasonable man will agree that the Government should pay a fair price for the service, and I feel confident that eventually that fair price will be paid.

III.

The Present Position of the Railways.

We come very properly to inquire what has been the result of these and other forces which have focused themselves upon the railways. The situation cannot be presented any more succinctly than by stating a few of the facts which have been presented to the Interstate Commerce Commission in making the application for increased rates. The figures show that since 1910 the railroads in the territory affected have increased their investment in property and equipment by $660,000,000. During that same period their gross earnings have increased by $186,000,000, and at the same time their expenses have increased by $203,000,000. Thus these railroads found themselves worse off, after their last fiscal year, in net operating income by $17,000,000 than they were in 1910, before this additional investment of $660,000,000 had been made.

It was no wonder that Mr. Daniel Willard, president of the Baltimore and Ohio Railroad, in opening the case for the railroads before the Interstate Commerce Commission, made this remark:

"In view of all this, those responsible for the management of these properties would not be justified in continuing large expenditures of new capital for additional facilities and equipment, even if such capital were available at reasonable rates of interest."

The railroads in Central Freight Association territory for the past three years show in gross revenue, an increase of $78,000,000 a year, but a loss of $12,000,000 in operating income, after having added $123,000,000 to property investment. The return for these same companies for the months of July, August and September, 1913, show, as compared with the same months of 1912, a further shrinkage in net operating income of $7,000,000, or nearly 20 per cent.

The various lines of the railroad system with which I have the honor to be associated added $203,000,000 to their property investment between June 30th, 1910, and June 30th, 1913, and yet their net operating income for the year ending on the latter date was $11,000,000 less than for 1910, before this new money had been expended.

The Nation Threatened with Arterio Sclerosis.

Those of you who have in recent years been examined for life insurance have found that a special apparatus has been applied to ascertain the expansibility of your arteries, to find whether or not there was any tendency in your bodies toward hardening of the arteries, or as the doctors call it, arterio sclerosis. To apply the figure to our country: Are we not now receiving a blood pressure test indicating a very definite tendency toward national arterio sclerosis, or hardening of our great arteries of trade? Our country is growing, vast resources are being developed, immigration is increasing; yet our railroads are standing still.

It must be apparent that $203,000,000 one year cannot indefinitely be substracted from $186,000,000. And yet that is one of the problems which are pressing upon our country for solution, and it is pressing at a time when the world-wide demands for capital are increasing, and when the means for diverting the world's surplus capital into avenues which will yield the highest return, no matter where those avenues may be located, are being constantly simplified.

Can it not be that our country in its handling of the railroad problem has in recent years devoted so much energy to preventing discrimination between shippers and shipping communities that the necessity has been overlooked for conserving those delicate and sensitive factors which contribute so fundamentally to the perfecting and upbuilding of the transportation machine?

A few verses in Paul's first letter to the Corinthians, chapter XII, would seem to apply to the situation:

"For as the body is one and hath many members, and all the members of that body being many are one body;

"The eye cannot say unto the hand, I have no need of thee: nor again, the head to the feet, I have no need of you;

"And whether one member suffer all the members suffer with it, or one member be honored, all the members rejoice with it."

To be quite frank, gentlemen, the railroad manager wants to be honored, and he wants you to rejoice with him in the fact. He is earnestly trying to do his duty, and he begs your support and sympathy in accomplishing it.

We have pending to-day before the Interstate Commerce Commission an application for an increase of five per cent in freight rates. While the settlement of this particular proceeding must be made by the Commission itself, upon the basis of the facts presented to it, the railroad problem as a whole if it is to be solved properly it can only be so with the thoughtful and broad-minded support of the American people.

Let us not imagine that even if this increase is granted, all our troubles will immediately vanish. If you must have a tooth filled, you do not go to a dentist and merely ask him to prepare a crown with which to cap the tooth. You realize that the most perfectly designed crown ever made, if placed upon a cavity which had not been thoroughly excavated, would sooner or later find that the forces which had caused the original trouble would, not having been removed, again undermine this model superstructure. And so, dealing with the railroad problem we must not forget that there is a vast mass of error and unwisdom which has already found its way into public opinion and legislation which must be removed before a settlement will have been reached upon which sound progress can be based.

We come, therefore, seeking your support, and my feeling is that in seeking your support we shall realize completely in Pittsburgh the fulfillment of the prophecy so tersely expressed in Scriptural phrase: "Seek and ye shall find."

Government Regulation of Railways

An Address Delivered Before the Annual Meeting of the California Bar Association on November 20, 1913, at San Diego, California.

By William F. Herrin.

If, in railway regulation, our aim is to subserve and advance the public welfare, we are aided but little by a too exclusive reliance upon mere legal learning. Our true enlightenment must come from a study of the economic and financial conditions involved. We can thus more clearly discern the public interests affected and more readily understand that these interests are not really antagonistic to those of the railways. On the contrary, these interests are interdependent, and an injury to one works to the disadvantage of the other. In adopting this line of discussion, I assume that the public interest is of first importance and my purpose is to consider how that interest can best be promoted. I am not here to make a special plea for railway interests, but shall attempt, from an independent and impartial standpoint, to arrive at the principles which should govern the proper exercise of this regulative function. Naturally, with the lawyer's habit, I shall cite authorities to sustain my views—not by any means all the authorities which might be cited, for I shall ignore all who have been identified with railway management or service, however able or experienced they may be, and will content myself with citing only those whose study of the subject from an independent standpoint makes their conclusions worthy of our serious consideration, and whose record and position in public life lend no critic the opportunity of saying that they are biased in favor of railway interests.

One of the leading members of the Interstate Commerce Commission in point of ability and experience—Hon. Charles A. Prouty—recently said in his address before the National Association of Railway Commissioners that:

> **"The United States is trying an experiment which never has been successfully worked out yet in the history of the world. It is trying to build, develop and operate its railroads by private capital under rates and regulations fixed, not by the owners of the capital, but by the public."**

This authoritative statement challenges our attention. From it we apprehend that the scheme of public regulation of railways in this country is on trial, and we realize the novelty of this experiment and appreciate its tremendous importance not only to the owners of the billions of private capital involved, but to the public which is vitally interested in these modern highways of transportation. How to balance and harmonize these enormous interests might well perplex the ablest minds. The difficulties of the problem which must be solved no doubt question the wisdom of this experiment, but it would be idle to stop now to discuss whether or not the present scheme of regulation should have been adopted. It will not be abandoned because of difficulties which may arise—it must proceed to its conclusion of success or failure.

But it is profitable, for a moment, to recall the evils which arose in the administration of railways before their public regulation was attempted.

No principle is more vital in railway administration than that there shall be no unjust discrimination between shippers as to service rendered or the rates charged therefor. Unless all shippers pay the same rates for the same service, it would be possible for the favored shipper to cripple or destroy his business rival. There could be no more insidious or vicious practice than to favor one shipper or class of shippers at the expense of others. Such a disturbing force would prevent any sound business development and would be corruptive and destructive in its tendencies. Yet these vicious discriminations were frequent before they were abolished by the force of government regulation. Before such regulation, not only was the commercial business of the country prejudicially affected by the giving of rebates or secret rates, but such practice no doubt tended to impair the security of railway investments. At least we know that railroad bankruptcies and receiverships were more frequent in the days of rate-cutting than they are now, and while other causes may have contributed to such bankruptcies, yet it is certain that the cut-throat competition between railroads by means of rebates was in some measure responsible for the uncertain conditions of railroad finance. These conditions were intolerable to railroad management, and in justice to railroad managers it must be said that they were the victims of the business practices of the time. The traffic manager could not secure business for his road unless he met the rates given secretly by his competitor. However much he might desire to maintain his published rates and deal fairly with all his patrons, he was forced, in competition with other carriers, to the giving of secret rates. Such practices could not be stopped except by government regulation, for one carrier could set the pace which all its competitors must follow. Undoubtedly, the removal of this one evil of secret rates and rebates fully justified government regulation, and I think no railroad manager would agree to dispense with government regulation at the cost of returning to the old conditions. No one familiar with the history of this subject can doubt that the provisions of the interstate commerce law, enforcing strict compliance with the tariffs filed, have been of great benefit to the railroads, and I think we should not doubt the sincerity of the leading railroad officials when they state that they accept government regulation and are, in good faith, aiding in the enforcement of the law.

Not only in the enforcement of the tariff rates, but in other important particulars, is the law helpful to railroad interests. For example, in the making of tariffs, especially before government regulation, the carriers were often induced—I might say compelled—to publish rates which unjustly discriminated as between persons or places. Shippers offering large tonnage were frequently able, as the consideration for their patronage, to secure more favorable rates than were given to smaller shippers, and important and influential business centers often, for similar reasons, were able to secure advantages over smaller communities which should not have been given. The action of a commission in removing such discriminations would be accepted by the parties interested, whereas, should the railways alone attempt to do this, they would provoke hostility upon the part of those who might have the power of injuring them. In other words, there are many questions which must arise between the railways and their patrons which should be determined by some impartial arbiter, and in all such cases it is for the best interest of the railways that a tribunal should be provided to determine these questions. I have said this much to show that the railways have good reason to accept any rational and fair scheme of regulation administered with reason and impartiality.

How, then, arises the doubt in the mind of Interstate Commerce Commissioner Prouty that the scheme of railway regulation adopted in the United States may not be successful?

He says:

> **"The question is here, Can you obtain under this system (of regulation) the new money which is necessary to develop our old railroad systems and to build our new railroad systems? That is the crucial question."**

Upon this point he further says:

> **"When the Interstate Commerce Commission makes an order, which possibly means $1,000,000 a year to the carriers affected by it, $20,000,000 upon a five per cent basis, in one single bite, you cannot help feeling the load of responsibility which goes with the making of the order. . . . It is the duty of the railroad commissioner to most scrupulously protect the railroad, and to mete out to the railroad the most exact justice. It is coming to be apprehended that that is required, not merely as a measure of justice to the railway, but as a measure of right in the interest of the public.**
>
> **"The railroad is a public servant. That phrase comes to us from the Supreme Court, and has been for a quarter of a century in the mouth of everybody who has to do with this subject. It comes, as time goes on, to take on a different meaning. Originally, the people said, 'The railroad is our servant, therefore we can kick the railroad and cuff the railroad ad libitum.'**
>
> **"It is coming to be understood, gentlemen, that just as your servant can only properly discharge his duties, when he is suitably fed, suitably clothed, and suitably housed, so the railroad can only properly discharge its duties when it receives proper treatment from the public. It is coming to be apprehended that in the final analysis, the public pays the bill and that it pays for us, as railroad commissioners, to accord to the railroad just and fair treatment. That, I say, is not only demanded by justice—it is demanded by public interest."**

It certainly needs no argument to sustain the views thus clearly expressed by one so competent to speak upon this important subject. Mr. Prouty has no bias in favor of railroad interests. He speaks from the standpoint of public interest, and his long and notable record of public service requires us to give serious consideration to his views. He advances no doubtful premises or argument; on the contrary, his statements are obvious and self-evident truths which any fair-minded person must recognize.

No one will question the dependence of this country upon its railways. No other factor has been so important in our national development, and if our country is to advance it must have adequate transportation facilities. Interstate Commerce Commissioner Franklin K. Lane has well said that:

> "The railroad is our common highroad; it is not a luxury; it is not a concern in which the farmer and the manufacturer alone are interested; it is an essential to the commercial life of our people, almost as necessary as the land itself, for we have grown up as a people to be physically dependent upon our railroads. No other people are so bound up as we in economic inter-dependence. No one community in all this land lives to itself. We have grown as railroads were built. We have made a community of a continent."

To the same effect I quote from Theodore Roosevelt:

> "The great need of the hour, from the standpoint of the general public—of the producer, consumer and shipper alike—is the need for better transportation facilities, for additional tracks, additional terminals, and improvements in the actual handling of the railroads, and all this with the least possible delay. Ample, safe and rapid transportation facilities are even more necessary than cheap transportation. The prime need is for the investment of money which will provide better terminal facilities, additional tracks, and a greater number of cars and locomotives, while at the same time securing, if possible, better wages and shorter hours for the employees. There must be just and reasonable regulation of rates, but any arbitrary and unthinking movement to cut them down may be equivalent to putting a complete stop to the effort to provide better transportation."

In order to equip our railroads to meet the demands upon them, and to keep pace with the development of the country, large amounts of private capital must be provided. Many hundreds of millions of dollars annually are required for this purpose. During recent years the railroads, because of the difficulty of securing the necessary capital, have not been able to make the extensions and improvements requisite to meet extraordinary conditions which have occurred and may occur again at any time, such as a large agricultural crop throughout the country, or traffic movements required in case of war, etc. As a consequence the railways may be said to have fallen behind the country's progress and necessities.

How far new capital is required for the improvement of our railways has been given careful consideration by the Railroad Securities Commission appointed by the President under an Act of Congress, which made its report in November, 1911. President Hadley, of Yale, was chairman of this Commission and his associates were men of high character and ability. The report of this Commission says:

> "There is a widespread belief, based on imperfect examination of the evidence, that the amount of capital needed for the future development of our railroad system is small in proportion to that which has been required in the past; that the profits on such added investments of capital are reasonably well assured; and that we can therefore fix attention predominantly, if not exclusively, on the needs of the shipper without interfering with the necessary supply of new money from the investors.
>
> "It is quite possible that the building of additional railroad mileage will be far less rapid in the future than it has been in the past, but the capital needed for the development and the improvement of the mileage already existing is enormous, even if we built no new mileage at all. The outstanding stock and debt of the railways in the United States averages less than $60,000 a mile of line. This figure is bound to be greatly increased in the immediate future. As our population grows denser, we shall need more and more to approximate European standards of construction by the increased amount of double track, the abolition of grade crossings, the development of station facilities both for passengers and for freight, and many other improvements scarcely less fundamental. While our railroads are perhaps even better equipped than those of Europe for the economical handling of large masses of long distance freight, they are far from being adequately provided with appliances to secure the convenience of the public or the safety of passengers and employees. The cost of all these things is very great. The average capitalization per mile of railroads in Germany is $109,000, in France $137,000, in Belgium $177,000, in Great Britain $265,000; and, contrary to the commonly received opinion, much of this excess of cost as compared with American roads, is due to other causes than the price of real estate—an item in which our companies have had a great advantage. The cost of European roads has been largely due to improvements which we have not yet made and many of which we must make in the future as population grows denser. The thousands of millions of dollars needed for these purposes must be raised by the sale of securities."

Now, can the railroads, under present conditions, offer securities upon which the needed funds can be obtained?

Upon this point the Railroad Securities Commission say:

> "Neither the rate of return actually received on the par value of American railroad bonds and stocks to-day, nor the security which can be offered for additional railroad investments in the future, will make it easy to raise the needed amount of capital.
>
> "The ratio of interest and dividends to outstanding bonds and stocks of American railroads is not quite four and a half per cent in each case. The average ratio of dividends to the capital of national banks is between ten and eleven per cent. If it be objected that the value of the stocks of our railroads is in considerable measure due to the growth of the community rather than to the cash originally invested, and that the bonds and stocks of railroads should therefore be compared with the combined capital and surplus of the national banks, we find that these banks have for the last three years maintained an average ratio of dividends to capital and surplus combined of over six and a half per cent. If we look not at the sums divided, but at the sums earned, we find the same difference of profit in favor of the banks."

And further this report says:

> "We hear much about a reasonable return on capital. A reasonable return is one which under honest accounting and responsible management will attract the amount of investors' money needed for the development of our railroad facilities. More than this is an unnecessary public burden. Less than this means a check to railroad construction and to the development of traffic. Where the investment is secure, a reasonable return is a rate which approximates the rate of interest which prevails in other lines of industry. Where the future is uncertain the investor demands, and is justified in demanding, a chance of added profit to compensate for his risk. We cannot secure the immense amount of capital needed unless we make profits and risks commensurate. If rates are going to be reduced whenever dividends exceed current rates of interest, investors will seek other fields where the hazard is less or the opportunity greater. In no event can we expect railroads to be developed merely to pay their owners such a return as they could have obtained by the purchase if investment securities which do not involve the hazards of construction or the risks of operation."

So we have this problem in a nutshell. The railways cannot compete with other industries in obtaining money for their needs unless their earnings approximate the rate of return gained by such industries. If railway earnings are less than this, capital will seek investment in other securities, leaving the railways without funds needed. The securities offered by railroads must, at least, equal in attractiveness those offered by other industries, or capital will avoid railroad investments.

It is a matter of common knowledge that for the last three or four years it has been very difficult for the railroads to secure upon any reasonable terms the money actually needed by them. I do not ignore the fact that the stringency of the money market affects all other enterprises, including the efforts of states and municipalities to borrow money. But the railways are under special disadvantage in that they cannot raise their rates without the consent of governmental authority while other corporations and individuals free from such regulation may raise their prices and thus secure a return to meet new financial conditions—and state and municipal corporations may, of course, rely upon the practically unrestrained power of taxation to secure necessary funds.

Now, if the present tariff rates were certain to be continued, so long as the earnings were necessary to the finances of the railways, it would still be difficult under present conditions for them to secure the money urgently needed for improvements. But the railways cannot deal with this subject upon the assurance that present rates will be continued; on the contrary, rate reductions are being made from time to time by the Interstate Commerce Commission and by state railroad commissions, and applications for increase in rates have generally been unsuccessful, so that the governmental power to fix rates overshadows the situation as a menace which makes it practically impossible at the present time for the railways to secure any long-time loans, or any loans upon reasonable rates of interest.

I assume that present financial conditions are temporary, and that in the near future we may expect the return to normal conditions; it is in view of such normal conditions that we should consider these questions, and if we assume the most favorable financial conditions, the fact still remains that the Interstate Commerce Commission, and the state railroad commissions, with the power vested in them to fix rates, may make it difficult, if not impossible, for the railroads to obtain the money needed. That is to say, if the power of regulation is so exercised as to force reductions, which, if accepted, must result in bankruptcy, the relief which might be given by the courts after tedious and costly litigation would hardly invite the investment of private capital. Even though the capital already invested could be protected against arbitrary reductions, it could not be expected that new capital would be found to run the risk of further litigation, and, as President Roosevelt has said, an arbitrary rate reduction might put a complete stop to the effort to provide better transportation. So we are forced to the conclusion that it rests with the railroad commissions, state and national, to determine how far, if at all, the railroads of this country shall be extended and improved by means of private capital.

In his address, from which I have already quoted, Mr. Prouty, in referring to the fact that practically all railroad building in Canada was aided by government subsidies, said:

> "We may come to that same idea. We may conclude that railroads ought not to be allowed to charge rates which will induce the building of new railroads by private capital. Perhaps that ought to be the conclusion, but what I say now is that upon the manner in which you gentlemen (the Railroad Commissioners of the different States) deal with this subject of railroad regulation, very intimately depends the success with which this experiment is to be worked out, and the future of that question in this country of ours."

The *experiment* to which Mr. Prouty refers is, as stated in his own language, the building, development and operation of the railways of this country "by private capital, under rates and regulations fixed, not by the owners of that capital, but by the public."

Now, what are the difficulties, if any, which stand in the way of the success of this "experiment"? First, let us define this power of regulation, and mark its boundaries and limitations.

The Supreme Court of the United States has more than once said that this "power of regulation is not the power to destroy." There is nothing inherent in the power of regulation which should make it a destructive force. On the contrary, there is no good reason why it should not secure every public interest without impairing the investments which have produced the railways of the country.

Again, in speaking of this power of regulation, the Supreme Court of the United States recently said:

> "It must be remembered that railroads are the private property of their owners; that while from the public character of the work in which they are engaged, the public has the power to prescribe rules for securing faithful and efficient service and equality between shippers and communities, yet in no proper sense is the public a general manager."

And the court, in the opinion from which I quote, goes on to define the power or function of regulation to be the enforcement of two leading prohibitions against the railways, viz.: (1) "that their charges shall not be unjust or unreasonable," and (2) "that they shall not unjustly discriminate so as to give undue preference or disadvantage to persons or traffic similarly circumstanced."

Now, certainly, the removal or prevention of unjust or unreasonable rates, and of unjust discrimination, would strengthen rather than weaken the railways, and if the regulative power had been exercised strictly within the definitions of the United States Supreme Court there could be no serious question that the experiment of government regulation would prove successful—that is to say, the railways of this country could be extended, maintained and operated to their highest efficiency by means of private capital, and without financial aid from the government.

Since the era of railway bankruptcies and receivership in the early nineties, the commercial and business development of the country has largely increased. For example, comparing the years 1892 and 1912 we find that the freight tons carried one mile increased 202.9 per cent and the passengers carried one mile increased 150.8 per cent. Because of reductions in rates this increased volume of business in 1912 produced only 59.9 per cent more revenue than was earned in 1892.

While owing to the increasing volume of traffic many roads are able to show an increase in gross earnings, the increasing expenses of operation almost uniformly reduce the net earnings. For example, between the years 1907 and 1911, the railways of the United States put into their property over two billion dollars new capital, yet they received over eight million dollars less net earnings than were received by them in 1907 before this two billions of new capital was invested.

These striking facts explain the decline of railway credit, and the practical inability of the railways at the present time to secure the new capital needed by them. It is no exaggeration to say that railway financial conditions are critical. Yet, the broad fact remains that the sparsity of traffic which in 1892 contributed to railroad bankruptcies no longer exists. The main lines of road almost without exception now enjoy a volume of traffic sufficient, with reasonable rates, to ensure their successful operation, and this, notwithstanding the largely increased expenses of operation.

We may here naturally inquire how far the expenses of operation have been increased through governmental regulation. This includes legislation, state and national, which has contributed many conditions requiring increased expenses, such as laws regulating the hours of service, safety appliances, separation of grades, full crews, headlights, standards of construction, etc. Then the cost of complying with orders of commissions, state and national, as to keeping of records and statistics and furnishing copies of same is considerable. The increase in wages has added very greatly to the cost of operation. Congress, by the enactment of what is called the Newland's law, which is a development of the former Erdman act, has provided a method for the arbitration of labor disputes. In order to avoid strikes this law must be invoked and in so far as the officers of the government participate in the proceedings under this law they must share the responsibility for the resulting increase in wages, if any.

Then we have also the increase in taxation, which, comparing the years 1892 and 1912, is more than 250 per cent. Throughout the United States the railways pay in taxes 4.21 per cent of their gross earnings. In California we are required to pay 4¾ per cent.

All these items of expense should be regarded by the railway commissions, state and national, in their decisions as to the reasonableness of rates, and where, through no fault of the railway, expenses of operation have increased, it is difficult to understand why compensatory increases in rates should not be allowed. If such compensatory increases were permitted, no question would arise as to the adequacy of private capital to meet the problems of railroad operation, maintenance and extension.

By private capital I mean the funds obtained from private investors—which is the source from which all business of the country derives its support. Such funds will naturally seek the investment or security which promises the highest rate of interest without danger of losing the principal. It follows that the credit of the railways can only be maintained by earnings sufficient to make investments in their securities as attractive as those offered by other business investments.

The rationale of this situation is well stated by the Hon. Franklin K. Lane as follows:

> "If our commerce is to grow and trade is to be fluent, if we are to continue as a multitude of interdependent communities and individuals, if we are to give the world the benefit of the great resources of this country, and put to its highest use the genius for industrial development which our people manifest, our existing lines of railroad must be made profitable to their owners, and money must find that investment in railroads is both attractive and secure. A regulating body which is not fair to those who have invested their money in a public utility does infinite damage to the community that it is attempting to serve. To be just to the stockholders, however, does not mean that injustice must be done the public. The traffic manager may not ask all that the traffic will bear without doing his railroad in the end a great wrong, nor can the shipper hope to have lasting benefit from any injustice done to those who have put their money at the public service."

Obviously, the experiment of government regulation must prove a failure if it forces down the net income of the railways to such an extent thta new capital needed for extensions and improvements cannot be secured. This may be done not only by reducing rates but by imposing conditions which largely increase the expense of operation.

After all unjust discriminations are removed, and the rates are such as do not obstruct the movement of traffic, the first interest of the public is that railway earnings shall be sufficient to give the railways first-class credit in the money markets of the world, for it is only by such credit that adequate transportation facilities, by means of private capital, can be secured.

It is far better for the business of the country that railway earnings should be sufficient to maintain such credit than that any mere reductions in rates should be made which might impair that credit. Concretely stated, it is far more important to the public interest that the money necessary to furnish adequate transportation facilities should be expended by the railways for that purpose than that tariff reductions should be made to the extent of the interest rate upon that money.

The first consideration of the rate-regulating power should be to secure the most efficient transportation facilities for the public, and obviously it should avoid any policy or action tending to cripple the railways or lessen their ability to perform their public service.

When all unjust discriminations are abolished and resulting rates are such that all traffic freely moves between points of production and market destination, such rates are certainly not unreasonable to the public, even though they produce large railway earnings, and if such earnings are actually required as a basis for obtaining the new capital needed for extensions and betterments, why should they not be allowed? Why should there be an effort on the part of the governmental authorities to force these rates down to, or nearly to, the point where the courts would enjoin the reduction because confiscatory? The shipper has no real complaint if he is on an equality with all other shippers and his merchandise readily moves at the higher rate which insures him the most efficient transportation facilities. To bring the rate down nearly to the point of confiscation, and thus prevent the needed extensions and improvements in transportation service required by the shipper, is an actual detriment to the shipper and therefore to the public.

What I have said may not be dismissed as a partisan argument advanced by a railroad official for I am fully sustained by what was said by Judge Prouty in a recent public address and I take the liberty of further quoting from him as follows:

> "The two original purposes . . . . of this (Interstate Commerce) act were, first, to prevent discrimination; second, to make rates reasonable. . . .
>
> "I think those two purposes of the act to regulate commerce have been in the main accomplished. . . .
>
> "What I may term the danger point in the railroad situation has very radically changed in the last 25 years. Twenty-five years ago the danger point was the discrimination. Twenty-five years ago the danger point was the unreasonable rate. To-day, in my opin-

> ion, neither of those are danger points. The danger point to-day, I think, is the inadequate service, and the inadequate facility.
>
> "Now I am speaking to business men. I believe you will agree with me that the service and the facility are of more importance to you than any slight difference in rate. You want your cars. You want reasonable expedition. You want everything which goes with an efficient service, and that you must have. . . .
>
> "I think that to-day it is just as much the duty of the commission to see that the railroads are given reasonable rates which will yield to them a fair return, as it is to see that no unreasonable rate is charged to the shipper, and I believe this is in the highest interest of the shipper himself. . . .
>
> "When you reduce the rates of the railroads of the country to a point where they no longer yield a profit, you have destroyed the value of their property, you have annihilated their credit, and you have made it absolutely impossible for the railroads to provide the service which you must have.
>
> "I ought, as a member of the Interstate Commerce Commission, in passing upon the reasonableness of a rate, to bear in mind the fact that that property has been dedicated to the public use upon the theory that it is to enjoy a fair return. But if I were to lay out of view entirely the interest of the railroad, if I were to consider your interest, and your interest alone, it would be my duty, and my highest duty to you, to allow the railroad a sufficient rate so that it might from that rate obtain the needed revenue with which to develop, with which to maintain its credit, with which to give you the service which you must have, and which you cannot otherwise enjoy. . . .
>
> "In the past, as a rule, the orders of the Commission have been in reduction of rates rather than in permitting their advance. . . . But this is a time of change, and no man can forecast the future. The cost of living is advancing. The cost of almost everything which a railroad buys is increasing. Wages which they must pay are increasing. . . . So I say to you, gentlemen, that no man can foretell whether in the years to come it will be, or will not be, necessary to allow some increase in the transportation charges of our railroads. What I desire you to remember is this: That if that time comes, it will be the duty of the commission to permit that advance. That would not only be an act of justice, which you, as believers in the square deal would approve, but would also conserve in the highest degree your interest as shippers."

In what Judge Prouty has thus said I believe he represents the spirit and thought which actuates his colleagues as well as the railroad commissions of the different states in the discharge of their official duties, and from this I argue that the railroads need not fear injustice which at the same time would cause a greater injustice to the best interests of the whole country.

We cannot doubt that when these considerations are generally understood, as they are coming to be and will be, the public interest in these matters will receive protection at the hands of the railway commissions of the country. I do not think it possible that the railway commissions will deliberately or purposely embarrass the railways to prevent them from obtaining the private capital required for their needs; in other words, to make the experiment of government regulation a failure in order to bring about government ownership of the railways. I do not believe that government regulation will be made a failure because of the deliberate purpose of railway commissions to make it so. All that is needed is a thorough understanding of the situation, not only by the railway commissions but by the railway officials themselves, and it is the clear duty of the latter to aid in every reasonable way the railway commissions in their work. As I have said, the railway officials have good reason to accept this regulative function on the part of the government, but this function involves many difficult and complex questions which can only be solved rightly and for the best interests of all by the thorough co-operation of railway officials with the railway commissions.

The office of a railroad commissioner is one of high responsibility. I believe no other office in our government is more important. It requires great ability and no one can be well qualified for this position without training and experience and such independence of character as makes the official indifferent to mere political preferment. The tenure of office and salary paid should be such that there would be no difficulty in obtaining for these places the best qualified men in the country. The work thus far done by the railway commissions, state and federal, while largely preliminary or formative, gives earnest of the permanent value of this governmental function. The public is coming to recognize its importance and no doubt will insist upon any changes either in the law or in its administration which are necessary to make the experiment of public regulation a success rather than a failure.

I have aimed briefly to point out the importance, not only to the railways but to the public, of government regulation of railways. I have shown, I think, that without such regulation neither the public interest nor that of the railways was fully protected. Some measure of regulation was therefore necessary. It may be that the regulation which has ensued has gone beyond the best and wisest limits; but I do not think it material to raise that question, for, after all, a wise and enlightened administration of the present laws upon this subject will, I am satisfied, be successful, whereas, the best laws possible would result in failure if unwisely, ignorantly or viciously administered. So the administration of our present laws is the all important thing, and that of course, largely depends upon the men who constitute the Interstate Commerce Commission and the railroad commissions of the different states. There are possible conflicts between the national and state authorities which may only be solved by additional legislation but in good time that will be provided, if necessary. And while the leading responsibility for success or failure of government regulation must rest upon the railway commissions, I have frankly stated that the railway officials cannot escape a large responsibility, and their duty is plain to co-operate with and aid the government officials in every reasonable way. Where the officers of the government go beyond the limits of constitutional power, and such acts affect the vital interests of the railways, there is no recourse other than an appeal to the courts of the country. But I hope the period of litigating questions of constitutional law upon this subject has largely passed and that the effort of all officials and parties interested will henceforth be loyally devoted to solving the question at hand in the best interest of the public, for, if that is done, I am certain that the railway interests will be fully protected.

The Year's Anthracite Shipments.

FINAL figures for 1913 show that the total shipments of anthracite coal from Pennsylvania last year were 69,069,628 tons. This is 5,459,050 tons more than in 1912 when the output was curtailed by a suspension in the spring while a new agreement was being negotiated with the mine workers; but 884,669 tons less than in 1911 which was the record year for high production.

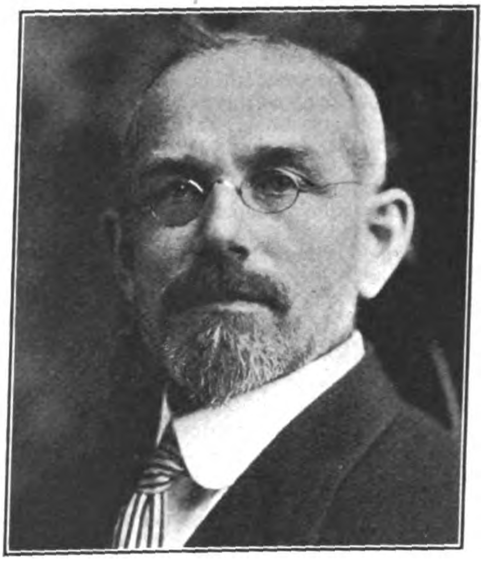
Total shipments of anthracite last month were 5,662,618 tons as against 5,944,502 tons in December, 1912, a decrease of 281,884 tons.

Certain Considerations in Railway Rate-Making

FROM A PAPER BEFORE THE AMERICAN ECONOMIC ASSOCIATION, MINNEAPOLIS, MINN., DECEMBER 29, 1913.

By BALTHASAR H. MEYER,

MEMBER OF THE INTERSTATE COMMERCE COMMISSION.



I BELIEVE it is possible to approximate a standard in rate-making much more than has been done in this country in the past, but the kaleidoscopic nature of the facts which enter into a particular rate problem will probably always defeat every attempt to impose a uniform rate rule upon the traffic of to-day throughout the United States. Were we standing at the threshold of the industrial epoch which brought the railway and modern manufactures with none of the industrial relations of the contemporary structure of society established, a very different problem, and, consequently, also a very different solution, would be presented. The standard which I expect to see develop more rapidly in the future than in the past is a certain approximate standard applicable to normal or typical conditions from which variations will be made in the light of the concrete facts in each particular case.

THE RATE PROBLEM PERPETUAL.

This is not the first time that the economic association has devoted a part of its meeting to a discussion of railway questions, as an examination of past programs will attest. In all probability, it will not be the last, for the question of railway rates embraces elements which are perpetual and which doubtless inhere in every industrial society which employs the railway as one of its instrumentalities. As long as rival individuals engage in trade, offering the same or competing commodities, placed upon the market by competing producers and sought by rival consumers, and any or all of these believe transportation charges to be excessive or discriminatory, the railway rate problem will continue to exist. The present system of private ownership and systems of regulation may give way to different systems of regulation, and these in turn may be superseded by a system of public ownership; but none of these will terminate rate controversies. Changes in ownership and systems of regulation and administration may eliminate some rate questions; they will with certainty originate others, and the rule or rules which suggest settlements to-day may have to give way to other rules which the conditions of the future may require. The doctrine of relativity applies also to transportation.

RAILWAY RATES AND IMPORT DUTIES.

In dealing with railway rates we come in contact with nation-wide interests and forces, and, indirectly, and perhaps involuntarily, also with international forces. Under the law our appointed jurisdiction in the United States may stop with ocean, gulf and the 49th parallel; the economic effect of our action often goes far beyond. Considerations of this kind have led those foreign countries in which the railways are publicly owned to view their respective industrial policies as a united whole, of which the railway is a part. The administration of the railway is there made an instrument in shaping commercial policy. Railway rates and customs duties are frequently treated together, and rate-making is conducted in harmony with the customs policy of the country. In the United States, customs duties and railway rates have as a matter of law always been strictly divorced. Whether railways will be permitted in the future through the rates of transportation which they prescribe to augment or diminish the rate of import duty imposed by the Federal Government, only the future can reveal. It will probably depend upon the wisdom and discretion with which the power of making railway rates will be exercised in this respect.

COMPARATIVE RATES.

It has long been customary to establish rates in the light of certain checks and comparisons. This has apparently been done on the theory that if numerous other rates can be cited which are applicable on the same or similar traffic, under substantially similar circumstances and conditions, a rate in harmony with such illustrations is likely to be just and reasonable. Comparisons of this kind when restricted to small areas, such as a single state, are rarely satisfactory, but when they extend over a number of states, or embrace the entire United States, including numerous rates which are the result of competition between carriers, water and rail, while not necessarily determinative are, nevertheless of sufficient interest and value to command respectful consideration if not confidence. In the absence of better measures and checks this is one of the most useful expedients. Its intrinsic value depends, of course, upon the manner in which the rates drawn into the comparison have been selected, and the influences and forces which united in originally establishing them.

COMPETITION IN RATE MAKING.

This suggests the element of competition as one of the considerations in the making of railway rates. The members of the economic association are so thoroughly familiar with the general aspects of this feature of our problem that I shall not devote any time to it. There are survivals of the competitive rate, but the merest novice in the railway history of the leading countries of the world knows that competition alone has nowhere permanently secured to the public reasonably adequate service at reasonable rates, and that in consequence practically the world over the competitive theory of railway rate-making has been abandoned. Where it does bring benefits to the public, competition is capable of producing better results than the best regulation. To what extent competition survives in railway rates or service to-day and what benefit the public may derive from it, lies outside of the scope of this paper.

VALUATION AND SECURITIES.

Perhaps the most important single factor, now unknown, which will enter into the consideration of railway rates in the future is that of the value of the property. Theoretically, it has long been considered by commissions and courts, but in practice its application has been limited to isolated valuations or partial valuations made under different, if not mutually exclusive methods, varying in degree of thoroughness and applied almost exclusively to meet allegations of confiscation of property. In the not distant future we may hope to know what the fair value or final value of our railway properties is, whatever these terms may be made to include. In the past attempt has been made to appeal to the volume and market value of outstanding securities with the view of having them considered as evidence of value to support a rate or rate structure under attack. In the future, after the valuations have been made, similar appeals can have little weight. Once the value of railway property has been officially established, and power to regulate service and rates co-extensive with the railway business lodged with competent administrative authority, the issuance of securities by railway corporations becomes a question of public morals. The public eye should be directed toward the value of railway property as determined under the valuation statute rather than to the market value, face value and number of pieces of paper which may have been circulated to represent the property. If there are people who prefer many pieces of paper, each with a smaller value, to fewer pieces of paper, each with a larger value, we may well permit them to gratify their whim, provided no burden is thereby imposed upon the rate paying public. As a matter of good morals we should prohibit as far as possible and make difficult the circulation of bad securities. We should legislate against the exploitation of the undiscriminating public when its speculative traits are appealed to, but under no circumstances should we recognize these engraved pieces of paper as the equivalent of property in the making of railway rates, or perchance, validate them through ill advised stock and bond legislation. The country urgently needs stock and bond legislation; but it will be better to have none than accept much of what is being proposed. What consideration, if any, should be given to securities issued in the past by railway companies in the valuation required to be made under the valuation act, is a matter which I cannot discuss with propriety at this time, and regarding which I shall express no opinion; nor should anything which I have said herein be construed as an intimation of what I believe the final conclusion upon this question ought to be. But what I am free to say is, that the task of valuation having been accomplished, outstanding securities against the valued property should not receive the least consideration in the establishment of rates to be collected for the public use of that property. As suggested before, with adequate legal provisions and effective administration covering value of the property, service, and rates, the public has no interest in railway securities except as a matter of morals. These moral purposes should be promoted and achieved to the fullest extent possible through legislation but great care must be exercised lest this legislation may by inadvertence or design make the value of securities a basis for rates with the possible consequence of imposing untold and utterly needless financial burdens upon the present and future generations of rate payers.

COST OF THE SERVICE.

A second factor equally fundamental with the value-of-the-property factor, which I believe will be employed very much more in the future, is that of the cost of service. A great variety of statistical analyses have heretofore been made, but systematic efforts directed toward the ascertainment of the approximate cost of the service have, generally speaking, been strangely neglected. A small minority among those dealing with rate problems have long advocated it, but their plans have been thwarted by the skepticism and unwillingness of a persistent majority. There are those who have opposed the development of statistical investigations along the lines of cost because they assert the results are bound to be misleading and unreliable. Others confess a fear that information of that kind will be misused. Others declare that it will result in the establishment of rigid distance tariffs, with attendant chaos in the industrial world. Still others maintain the view that the cost of the service has nothing to do with the rate either in general or in particular. The combined weight and influence of all these objectors has thus far been sufficient to obstruct substantial progress.

GROWTH OF COST ACCOUNTING.

It is a fact of common knowledge that so-called cost accounting has been applied to every important branch of industry except steam railway transportation. A prolific literature upon the subject has been produced within the last decade, and competent specialists in all branches of business are prepared to give these principles practical application. The railways themselves have made limited application of the principles of cost accounting to more than one half of the railway mileage in the United States. They declare, however, that this has been done for internal corporate administrative purposes rather than with a view of assisting in the establishment of just and reasonable rates. The difficulties of separating operating expenses among the various branches of the railway business are as apparent as the benefits of the final results are clear to those who are willing to undertake the task. It is perfectly obvious that controversy respecting the apportionment of maintenance of way items, for instance, can never end. Is this, however, sufficient reason for refraining from undertaking a work which is so promising in beneficial results? There exists surprising similarity in the methods employed by different railway companies in apportioning certain common or over-head expenses. This similarity appears to have been brought about without previous conference and agreement and is apparently the result of similar conclusions arrived at by men working at the same problem independently of one another. However, I am not suggesting that methods and rules which are now found to be common to several railway accounting departments are necessarily those which commissions should accept or prescribe. If cost accounting is not to be applied to railway transportation until every refinement has been settled by unanimous consent of the accountants, we shall never get anywhere. Institutional reforms are rarely effected from within and the railway is no exception. If such a rule were to be applied to the assessment and collection of taxes the government of every civilized country in the world would be obliged to cease its activities for want of revenue.

PRACTICAL APPLICATION.

A new system of express rates is about to be put into effect throughout the United States. It inaugurates a revolution in the conduct of the express business. It is a carefully considered experiment, the exact outcome of which no one can predict with full confidence. How will anyone be able to draw a conclusion at the expiration of a definite period of time regarding the financial results of the operation of the express companies without approximating a segregation of the expenses incurred by the railroads on account of the express business? Railway mail pay is the object of periodical controversy. Does not that involve essentially the same fundamental accounting questions? Passenger rates are an issue in different states in various parts of the country. How can these controversies be properly and justly settled without some reference to the cost of conducting the passenger business? One might suppose that the railways in this country would fairly vie with one another in producing the most scientific cost data in regard to their respective operations which the best talent can compile. With a few conspicuous exceptions, the exact contrary is the fact.

JOINT COSTS, ECONOMY AND EFFICIENCY.

Before I leave the subject of cost of service, kindly permit me to remind you of the impossibility of commenting upon such extremely important phases of the issues as are suggested by the words by-products and joint costs, which have been so ably treated by distinguished members of this association. I must deny myself the pleasure of reviewing their work.

Furthermore, I have commented upon the cost of service as a consideration in rate-making only. This entire paper might advantageously have been devoted to railway cost accounting as a test of efficiency and economy in operation; and after it has been ascertained what it actually costs to operate a railroad, a further inquiry into what it should cost to operate may profitably be instituted.

CONTROVERSY AN OLD ONE.

This whole controversy regarding the cost of the service is as old as the railway itself. Any method of separating expenses which may be adopted will at best have much room for honest differences of opinion and the employment of varying, arbitrary factors. To my mind this situation resolves itself ultimately into the fundamental proposition that cost, being one of the elements to be considered in testing the reasonableness of a rate, must be ascertained as accurately as the nature of the problem will permit, otherwise it can not be considered. How can anyone give consideration to costs unless he knows what they are? Concluding that we must arrive at costs, it devolves upon reasonable men to elaborate workable rules and methods and employ the results with a full consciousness of the limitations. After the value of the property has been established, the cost of conducting the business approximated, and the value of the service considered, there will still remain a wide zone within which to exercise "the flexible limits of judgment.

PUBLIC POLICY.

This leads me to remark briefly regarding a third fundamental factor which is influential in locating the point representing the rate within the zone of reasonableness, namely, that of public policy. The only public policy which the administrative branch of the government can officially know is the policy declared by the legislative branch through its statutory enactments. Legislatures set up the standards in accordance with which administrative bodies must measure rates; and regulative statutes generally leave ample room for the exercise of wise discretion. The public policy thus prescribed is expressed in most general terms, leaving the detailed applications to administrative action and judgment. It is not this kind of public policy which, if my impressions are correct, people have in mind when they assert that the making of railway rates has nothing to do with the cost of the service, but that it is entirely a matter of public policy. I think that generally this statement emanates from the idea that rates are to be established at any particular time solely in the light of the available surplus of the railway corporation upon which the rate is to be imposed and the judgment or feeling of the rate maker regarding the real or supposed needs of different patrons or classes of patrons. If this is the proper basis for the making of rates the statistical analyses to which I have referred above are superfluous and should not be undertaken. All that is necessary under the operations of that kind of a public-policy-system of rate-making is a balance sheet and an eye on the next election. It is ascertained how much money the railway company can spare according to its balance sheet, and then it is a matter of "policy" who shall get the benefit of the reduction or bear the burden of an advance.

RATES IN POLITICS.

Nor is such a theory and practice of rate making without merit. An organization of society is conceivable in which it would be the very best system. It would be a perfect fit in an ideal society constructed upon this theory. In a patriarchal organization of society it might be the only proper system, for the patriarch would be presumed to know from whom to take and to whom to give. Our present organization does not represent this type of society. An attempt to impose such a theory upon a democratic organization of society must inevitably result in throwing the entire question of railway rates into politics. It will then be largely, if not entirely, a question of clamor as to whether passengers shall ride at the expense of freight, whether wheat shall have the preference over cotton, live stock over lumber, coal over ore, vegetables over fruit, sugar over potatoes, rice over corn, etc. Obviously under such a system the available surplus will be dispersed—perhaps I should say, disbursed—in the direction of the loudest clamor and the largest vote. In a country like Prussia with its magnificent administrative traditions and machinery and far-sighted commercial and traffic statesmanship, an application of the patriarchal principle seems more readily conceivable, but even there rates are not made in just that way. While under a system of state ownership like the Prussian public policy in any proper sense of the term may exert itself more directly and more liberally, this policy is certain to meet shipwreck anywhere if it does not embrace approximations of standards with which to test that policy from the point of view of railway operation. In other words, public policy is a framework, a background, interpretive in character, which should act as a guide in the application of more definite working rules in rate making.

Directing Rate Development.

There have been developed in the United States systems of rates with blankets covering two thirds of the entire continent. Attempts have been made to break up these vast blankets, against which both common sense and reason instinctively rebel. But what is the standard toward which this breaking-up process is to be directed? Inordinately large groups have come into existence. If these are to be modified, by what measure is it to be done? The equalization theory of establishing rates for basal industries has been condemned. Along what lines are the new rates to be developed? The work of transforming these and other similarly indefensible features of rate-making of the past to which reference has just been made all point in the direction of greater consideration for distance in future rate-making. Transportation overcomes distance. Distance means expense. Shall distance have no weight in the establishment of the charge for that transportation? While no one who is at all familiar with the rates now in effect thoughout the United States could for a moment reasonably consider the rigid application of a distance tariff to all traffic, it is equally apparent that many peculiarly knotty complications and controversies have already been settled through the application of a distance tariff, and that many more await a similar treatment in the future. This being so, we find herein still another urgent reason for aggressively pushing investigations into the cost of the service.

Other Considerations.

The time limits wisely imposed by the economic association upon papers of this kind permit of reference only, without discussion, to the relation of freight rates to the classification of freight. The so-called elements of classification have been enumerated and discussed in numerous decisions readily available to all. From the standpoint of cost of service, classification resolves itself largely into ascertaining transportation costs and insurance risks. Instead of emphasizing volume of the traffic, it lays stress upon the balance of the volume of traffic in opposite directions. It inquires persistently into the utilization of car space and demands upon terminal facilities and generally acts as a unifying agent along defensible lines in the slow movement towards a uniform classification.

Value of the Service.

That indefinite term "value of the service" must also be separately named. "Classification" and "public policy" absorb the most of its content and "what the traffic will bear" may act as residual claimant. Those who are to follow me may attempt answers to questions relating to the value of service, to whom? for whom? for what?

Why a Rate Yard Stick Can Not Be Delivered.

If I have succeeded in pointing out "certain considerations in railway rate-making" they are the value of the property implying a fair return thereon, the cost of the service and a sound public policy, each to be applied and interpreted in the light of the others and of all other considerations whatsoever, through the exercise of a wise discretion in arriving at a judgment with respect to a particular statement of fact. The value of the property may be expressed in dollars in advance of any rate controversy. The rate of return may conceivably be established by fixed rules. The cost of the service may be approximated for any period of time and as of any date. Public policy may be outlined in general and specific language in legislative acts without reference to particular disputes All the other considerations in rate-making may be indexed and catalogued for handy reference. But no one can state in advance the specific facts in a rate problem or controversy and the attendant circumstances and conditions. A certain combination of facts may require the application of a certain standard. A combination of facts similar to these but in different proportions may require a somewhat different standard. Instead of searching for one standard a set of standards may be sought; and that standard or combination of standards employed in each particular case which is best adapted to promote justice to all parties in interest. It is more important that justice shall be achieved in a large way than that some specific standard shall be promulgated and adhered to under all circumstances. That is why I cannot give you a universal rate yard stick, but must content myself with directing attenion to a tew ot its fundamental components.

Annual Dinner of Newark Traffic Club.

THE Newark Traffic Club holds its annual dinner on the evening of January 24th. Addresses will be delivered by Mr. A. V. Hamburg, president of the Board of Trade and Mr. Jackson E. Reynolds, general attorney in the Central Railroad of New Jersey. Other speakers are also to be announced later. The dinner is to surpass all previous occasions, and surprises are in store for each guest.

Compensation of Labor on British and American Railways

By SLASON THOMPSON,

DIRECTOR OF THE BUREAU OF RAILWAY NEWS AND STATISTICS.

WITH wages one sixth to one half the scale forced on American railways by successive arbitrations at the point of the strike bayonet, British railways, with the approval of Parliament, have been permitted to meet small advances in the pay of employes with increased passenger fares and freight rates.

Hitherto it has been difficult to present in convincing form the disparity between British and American railway wages so as to show in their true contrast the fundamental differences existing in economies of construction and operation. This difficulty has been removed by the report just made by the British Board of Trade presenting terms of settlements in railway wage disputes during two years' operation of the amended Railway Conciliation Scheme. At a time when the relation of railway wages to railway rates has become of such engrossing interest in this country, it renders possible the measurement of American railway pay by British standards presented in the following statement:

DAILY RATE AWARDED BRITISH EMPLOYES COMPARED WITH 1912 AVERAGE EARNINGS PER MAN IN THE UNITED STATES.

	Great Britain Minimum	Great Britain Maximum	United States Average
Enginemen	$1.15	$2.18	$5.02
Firemen	.73	1.46	3.03
Conductors	.77	1.42	4.29
Trainmen	.63	1.42	3.02

Herein are set forth the actual earnings of four great classes of American railway labor in 1912, to which further additions have already been granted, compared with the new-won scale of British employes. For enginemen and firemen the services are almost identical, but conductors and trainmen here differ somewhat from the nearest British counterpart. American earnings, including overtime and extras, are used, it is true; yet their use against the British maximum is more than fair, for this is far above the average. Actual earnings, computed as the American's, would be roughly a mean between minimum and maximum. According to latest determinations, in fact, $1.86 daily was the average earnings for engineers, $1.11 for firemen and $1.26 for passenger guards.

VALUABLE NEW DATA AFFORDED.

As British railway wage rates, devoid of all extras, have been impossible of ascertainment through lack of published figures, the chief value of the present report to the student of foreign railways lies in its exact data on actual scales of pay. Yearly English compilations, presenting only for a selected week the actual compensation paid by 27 companies in the United Kingdom, show only the average earned per man; there are available now, however, specific rates awarded the individual classes of employes in 219 wage disputes with additional information as to present conditions of service on British railroads.

Of the 219 settlements 107 were arrived at by agreement between deputations of the men and the companies alone; 93 by agreement between the two sides of conciliation boards without assistance of a chairman and 4 by such agreement with mediation of a chairman. Only in 15 cases was a chairman's decision required after efforts at agreement had failed.

Tracing the highest and lowest wage per week awarded the several classes of railway labor in England, Ireland and Scotland, the minima and maxima set in any dispute during the two years follow. In each award the scale is to stand as a rule from 2½ to 3 years:

HIGHEST AND LOWEST WAGE AWARDED BRITISH RAILWAY SERVANTS UNDER REVISED CONCILIATION SCHEME.

	Min.	Max.
	Per Week.	
1. Brakesmen	$3.76	$8.50
2. Capstan men	4.61	7.53*
3. Capstan lads	2.18	5.10
4. Carmen & vanguards	3.89	8.02*
5. Carmen, lads	1.70	4.87
6. Carriage cleaners ..	4.13	6.31
7. Carriage cl'ners, lads	1.70	4.25
8. Carriage and wagon examiners	3.64	8.26*
9. Checkers	3.89	7.78
10. Checkers, lads	1.70	4.87
11. Couplers, chockers, chain boys & slippers	5.10	5.46
12. Couplers, etc., lads.	1.94	4.37
13. Clerks, men	4.13	....
14. Clerks, lads	1.70	3.89
15. Engine cleaners	2.91	5.83
16. Engine cleaners, lads	1.70	4.87
17. Engine drivers and motormen	1.15 day	2.18 day†
	6.90 week	13.08 week†
18. Firemen	.73 day	1.46 day†
	4.38 week	8.76 week†
19. Gate keepers	3.64	5.83
20. Greasers	2.43	7.29†
21. Greaser lads	1.94	3.89
22. Guards (goods) ...	4.61	8.50
23. Guards (passenger)	4.87	8.50
24. Horse drivers	4.13	6.80*
25. Horse drivers, lads.	1.94	5.10
26. Laborers	4.61	6.07
27. Lampmen	4.13	6.31
28. Lampmen, lads	170	5.58
29. Loaders and sheeters	4.61	7.29*
30. Mechanics and artisans	5.83	7.78
31. Messengers, men ..	4.13	....
32. Messengers, lads...	1.70	4.61
33. Number takers	4.01	8.02*
34. Number takers, lads	1.70	4.87
35. Permanent way men	2.43	8.75
36. Pointsmen	4.25	6.56
37. Policemen	5.10	6.80

38. Porters	2.18	7.29*
39. Porter lads	1.70	4.61
40. Shunters	3.40	9.72*
41. Signal fitters and telegraph wiremen	4.87	10.93*†
42. Signal fitters and telegraph wiremen lads	2.91	5.34
43. Signal men	4.13	9.72†
44. Signal box lads	1.70	4.87
45. Ticket collectors and examiners	4.13	8.50*
46. Ticket collectors and examiners, lads	3.40	4.37
47. Watchmen	5.10	7.29
48. Yardsmen	4.13	9.23*

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* Maximum applies to foremen or specials.

† Exceptional rate for London district.

The highest wage rate awarded to any class of railway servants thus was the $2.18 daily or $13.08 weekly granted to engine drivers. This is to be compared with an average actual earning record in 1912 of $5.02 daily for enginemen of the United States; yet this British maximum wage not only is far beyond the generality of railway wages in the United Kingdom, but, as will be seen, is in itself exceptional for even railway engineers. There are American roads where the daily compensation of enginemen averages $5.50.

HIGHEST RATES RARE EXCEPTIONS.

Next highest in the wage scales set, it will be noted, are signal fitters and telegraph wiremen, but the rate, as indicated, is that set for foremen of the class in London. So also, with few exceptions, other wage awards which attain to the region of $8.00 per week apply to foremen, the leading member of a gang, to some special member or apply only in the London district. From an average maximum far below that figure rates of payment drop to the $2.18 per week which in one case was awarded to a porter in southwestern Scotland. This, too, is an exception. Conciliation Boards seem to have set 17 shillings per week ($4.13) as the general minimum for adult employes (although the minimum is broken also in certain cases of brakemen, carmen and vanguards, carriage and wagon examiners, checkers, engine cleaners, gatekeepers, greasers, number takers, permanent way men and shunters) and for "lads," as junior employes are termed, considered as apprentices, a minimum wage of 7 shillings ($1.70). For "lads" the maximum seldom is over £1 ($4.87) weekly.

As may be judged by the wide divergence between minima and maxima, unlike the practice in the United States no general wage rate applies to the same grade of railway labor. Two reasons explain the diversity: first, employes performing the same class of work with similar records of service vary widely in rate of pay because of difference in living conditions; secondly, employes performing the same class of work under similar living conditions vary widely because of difference in records of service. A graduated scale applies universally, in other words, itself adjusted to special conditions of special territories.

Lowest wage scales apply as a rule to Ireland, Scotland and the rural parts of England. Highest scales, on the other extreme, arise in the large cities where living costs are greater. So, in 1912, average weekly earnings of railway servants in Ireland were $5.04, in Scotland $5.91, and in England and Wales $6.80, the average for the United Kingdom being $6.65. The high record, $13.08, already mentioned in the case of engine drivers, applies to drivers of only a few long-distance trains on the Great Central Railway who reside permanently in London. Such men, receiving 3 shillings ($0.73) per week extra in consideration of their metropolitan living expenses, so attain their exceptional rate.

LABORIOUS ASCENT OF WAGE LADDER.

It is from the graduated scale, however, that one best appreciates the slow, laborious ascent which marks the British railway servant's rise in the wage scale. Beginning at the set minimum, his advance almost universally is at the rate of 1 shilling (24 cents) per week annually toward the maximum of the grade, reached not unusually after from 15 to 20 years. The maximum of $8.50 for brakemen is attained on the North Staffordshire Railway after 18 years of service, which began at $4.61. The similar maximum for passenger guards is reached on the same road in the "twenty-second year in charge of trains." In that period the guard has risen from 24 shillings to 35 shillings per week, that is, from $5.83 to $8.50, a weekly addition in 22 years of $2.67!

Money wages, it is true, constitute not the whole of the British railroad man's compensation, yet other allowances total almost nothing. A special investigation of 1907, results of which were published recently (See Railway Library for 1912, page 295), showed 204,237 adults and 15,915 lads receiving free uniform and other clothing; applied to all employes this was worth 8 cents per week for adults and 6 cents per week for lads. Free or reduced rent to 14,337 adults averaged for all employes 2 cents per week. Other allowances were of even smaller consequence. The British railway man is, moreover, allowed an annual holiday with pay varying with class of work and length of service from 3 to 6 days per year. Ordinarily, also, when required by work to lodge away from home temporarily, employes have been awarded "lodging allowances," which vary from 12 cents to 85 cents nightly.

It is significant, however, that in most cases where the bonus question has come up such extras in reward for added effort or efficiency are abolished at the request of the men in favor of the fixed advances demanded.

HOURS OF BRITISH RAILWAY LABOR.

Though hours of labor differ among the many classes almost as widely as do wages, ranging from 47 to 72 hours per week, the ten-hour day seems to be regarded as standard. Brakesmen work ten hours a day; engine drivers and firemen, 10 to 12; gatekeepers, 9 to 11; goods guards, 10 to 12; and passenger guards, 10 to 11. Permanent way men work from 55½ in summer to 47 in winter, with Saturday half-holiday. Overtime, as a rule, is paid as time and one quarter and Sunday, Good Friday or Christmas as time and one quarter to time and one half. Rare cases of double Sunday time occur.

What has been the total effect of these wage increases, already the cause for a rise in rates which has left few British railway charges untouched? Twenty-seven companies, employing more than 90 per cent of the railway servants of the United Kingdom, show these results.

AVERAGE WEEKLY EARNINGS OF BRITISH RAILWAY SERVANTS 1903 TO 1912.

First week in December.	Number employed in selected week.	Average weekly. earnings per head.
1903	448,944	$6.04
1904	446,197	6.08
1905	449,923	6.14
1906	458,579	6.17
1907	479,314	6.27
1908	459,753	6.07
1909	459,968	6.16
1910	463,520	6.25
1911	473,168	6.48
1912	482,905	6.65

Advanced wages granted toward the close of 1911 by many of the important companies, followed by additional increases on other railways in 1912, brought a rise of 23 cents in the average weekly earnings per man for 1911 and a further rise in 1912 of 17 cents per week! The 1912 average is 38 cents higher than that for 1907, another year of good trade.

American railways, paying an average wage of $733 per year, confronted by demands for 20 per cent advances and awards of 7 per cent, would seem to bear at least as heavy a burden as did their British counterparts, since compensated with public approval for their 2.6 per cent increase to a yearly wage of $346.

The Panama Canal and Transcontinental Railroads

EDITOR'S NOTE:—In view of the present agitation over freight rates and the nearness of the opening of the Panama Canal, the following abstract from "The Nation's Business" of conclusions reached by Professor Emory R. Johnson, now a member of the Pennsylvania Railroad Commission, in his study made in 1912 relative to the probable effect of this new waterway upon the currents of domestic commerce, are of peculiar interest to railroad officials. From a railway point of view perhaps the most interesting conclusion reached by Professor Johnson is that the general and immediate effect upon railroads of the opening of the Canal will be to lessen their profits, although he is hopeful that the ultimate effect will prove beneficial. This conclusion presents another argument, and a very forcible one, in favor of the rate increases which the railways in Eastern territory are now making an effort to have put in effect.

THE approaching completion of the Panama Canal lifts the question of its influence on transcontinental railroads from the realm of surmise into the realm of practical application and decision. It also becomes apparent that whether transcontinental railroads are affected either favorably or unfavorably there is a possibility of unfavorable influence upon business in the territory in the Middle West which they serve.

Early in 1912, Professor Emory R. Johnson prepared an elaborate discussion relative to "The Relation of the Panama Canal to the Traffic and Rates of American Railroads." This can be secured as Senate Docuemnt 875 of the Second Session of the Sixty-second Congress.

Professor Johnson brought together various groups of statistics that are essential to an understanding of his conclusions, but which cannot be printed in full within the limits of our space. Among other things, he showed the total intercoastal water traffic between 1906 and 1911. This is of particular moment to the whole subject. He shows that in the six years 1906-1911 the coastwise traffic of the Panama Railroad jumped from 50,851 to 211,028 tons. The coastwise traffic of the Pacific Mail increased from 50,803 to 76,972, though there were periods of sharp depressions in the meantime. In the year 1911, the California-Atlantic Steamship line carried 134,545 tons. In the six years the American Hawaiian Steamship line, omitting Hawaiian sugar, increased its tonnage from 146,900 to 458,300 tons.

All of the above mentioned lines used either the Panama Canal or the Tehuantepec Railroads. The approximate freight carried by way of Cape Horn and the Straits of Magellan declined from 271,276 to 137,907 tons.

Summing up all the traffic to come from the Isthmus, Professor Johnson shows that in 1906 the total, including Hawaiian sugar, was 560,727 tons, and that in 1911 it was 1,104,735.

These figures are included here to indicate that under normal conditions, with the exception of supplies for the Panama Canal, there has been a marked increase of intercoastal freight carried by water. The influence of the Tehuantepec Railroad has been marked from the time of its opening for traffic in 1907. The effect of the Panama Canal upon that railroad is, however, not a subject to be discussed in relation to the influence of the Canal on American railroads.

TRANSCONTINENTAL PERCENTAGES.

Professor Johnson shows that 22 per cent of the rail shipments to the Pacific Coast originates in New York, Boston and common points; that 13 per cent originates in Pittsburgh, Buffalo and common points; and 34 per cent of all such westbound freight originated on the Mississippi River and common points, and on the Missouri River and common points.

Several tables of Professor Johnson's compilation deal with westbound continental railroad class and commodity rates. Then follow tables dealing with eastbound and westbound water rates. The interrelation of intercoastal water rates and transcontinental rail rates is then made clear by a description of the "blanketing" method applied to large portions of the continental territory of the United States. This statement can be made clear by remarking that in all of eastern Illinois and the greater part of Wisconsin rate groups would be similar. This applies to ten other "blanketed" territories; for instance, rate groups apply as related to all of Mississippi, western Tennessee, part of Kentucky, all of Indiana, all of Ohio and the portion of Michigan bounded on the west by Lake Michigan and on the east by Lake Erie. These "blanketed" territories coincide in some measure to the rate zones that have been established by the Interstate Commerce Commission. After presenting every phase of the subject, Professor Johnson has come to certain definite conclusions, somewhat as follows:

Certain Conclusions

1. The Atlantic section of the United States will obtain a somewhat larger share of the trade of the Pacific coast and will secure more benefit of the cheap water routes than will the Middle West.

2. The middle section of the country will not, however, suffer from serious inroads upon its trade because, (a) the Middle West already has for its manufactures and other commodities, a firmly established hold upon the west coast trade; (b) co-operation between producers and rail carriers in the Middle West will enable them to compete successfully with Eastern producers not located in or near the Atlantic ports. (c) The Middle West will probably lose a part of the trade of the Pacific coast cities, but will hold nearly all of the trade of the intermountain states.

Lower Rates Eastward.

3. In Professor Johnson's opinion the trunk lines of the Atlantic seaboard will doubtless aid inland producers east and just west of the Alleghenys by making low through rates from places as far west as Cleveland and Indianapolis to the Pacific via the Atlantic ports and the Canal.

4. He also expects that the rail lines to the Gulf by a similar system will draw trade from Memphis and St. Louis and possibly from Kansas City to the Gulf for shipment to the Pacific coast via Gulf ports and the Canal.

Intermountain Trade.

5. On the other hand, Professor Johnson concludes that the transcontinental rail lines running west from Saint Paul, Chicago, St. Louis and the cities on the Missouri River may be expected to assist in building up the direct trade from the Mississippi and Missouri valleys to the cities in the intermountain states and thus aid the Middle West to resist the entry of goods into the intermountain states from Pacific coast points after shipment from the Eastern ports of the United States via the Canal.

Intermountain Rates Eastward.

6. It is anticipated that the intermountain states will probably secure lower freight rates for their trade with the Eastern section of the country and with the Middle West. At this point, we quote from Professor Johnson direct: "Instead of cutting deeply into the rates between the Eastern part of the United States and the Pacific coast terminals and thereby, under the rules of the Interstate Commerce Commission in the Spokane and Reno cases, automatically depressing all rates to intermediate points, the railroads will more probably decide to maintain fairly remunerative through rates to the west coast; to suffer the major share of the coast to coast traffic to be supplied by Eastern producers and to be carried through the canal; and to make only such reductions in the rates to and from the intermountain territory as may be required to cause that section to continue to trade mainly in the Middle West. The policy of the railroads will probably be to make it advantageous for the intermountain cities to trade less through Pacific coast jobbers and more, without the intervention of middlemen, directly with the Central and Eastern sections of the country."

Immediate Profits Lessened.

7. Relative to the general effect upon railroads Professor Johnson concludes that the immediate effect will be to lessen railroad profits. He is optimistic, however, in expecting the ultimate effect to lead to the enhancement of the prosperity of railroads, in that there is yet a great development to be anticipated in the Middle West, and that the rapid development of the Pacific coast due to the opening of the Panama Canal will lead to greater demands upon the traffic facilities of the nation both by water and by rail. Inasmuch as "the railroads connecting the Mississippi valley and the Pacific coast are among the most profitable lines in the United States," Professor Johnson holds out to these railroads an assurance that "the country they serve is certain to have a large development during the next quarter century, a development that will unquestionably be appreciably aided by the Panama Canal."

Toll Effects Negligible.

8. The final conclusion of Professor Johnson is that the exemption of coastwise steamships from the payment of Panama Canal tolls will have very slight appreciable effect upon the rates charged by the regular steamship lines. In any event, it would not average, in the opinion of Professor Johnson, more than sixty cents a ton. The remission of tolls will aid the owners of coastwise marine and not the shippers. Shippers who charter boats for handling of traffic will, however, be benefited by such remission.

The Traffic Department of the Panama-Pacific International Exposition

IT is safe to say that no exposition has faced so complicated a problem in transportation as does the Panama-Pacific International Exposition which will, in 1915, celebrate the completion of the Panama Canal. Indeed, it is the Canal itself which provides the final knot in the tangle of routes over which men, materials, and exhibits will travel to reach the Golden Gate; for the Canal and its functions in the shipping interests of the world, are, as yet, problematical factors; certainly there are no figures based on previous experience to indicate just how much of the traffic that will seek the West will pass through the Gatun Locks.

When to this natural problem, growing out of the completion of the canal, are added those accumulated problems that distance and variety of routes provide, it will be seen that Mr. A. M. Mortenson, chief of the Traffic Department of the Panama-Pacific International Exposition, has a task before him of the greatest magnitude and nicest discrimination, and though in a very vital sense the Panama Canal is essentially a maritime project, opening as it does a new marine route, by the same token its effect on all other modes of travel will be notable.

San Francisco's location at the extreme western edge of the American continent, the geographical location of the Exposition grounds, the fact that no trans-continental railroad has a terminal adjacent provide conditions unique in the history of transportation.

In discussing the subject recently Mr. Mortenson said:

"While rail transportation facilities are excellent and fully adequate during ordinary conditions, they are bound to become greatly congested in handling the immense passenger traffic in 1915. Extraordinary efforts will have to be made by all transcontinental lines to handle properly the unusual volume of business, and I realize that while these are primarily problems for the railroads to work out, it is the duty of the Traffic Department of the Exposition to co-operate and assist in every possible and proper way, as for instance by the preparation of estimates of the number of visitors to move.

"The movement of exhibits from all parts of the world and the rates to apply on such shipments are important matters to be handled by the Exposition's Traffic Department. Many thousands of tons of exhibits will be shipped from Europe, and the natural route, before the opening of the Canal, would be through the Atlantic or Gulf ports of entry, and thence via rail lines to San Francisco. But it appears that this routing will be changed when the Canal is opened.

"Already some of the Atlantic steamship lines have announced their intention of establishing a direct service from Europe to San Francisco in time to handle Exposition exhibits and passenger traffic. Docks are now being provided at Exposition grounds for the wharfage of such Atlantic-Pacific steamers so that these great liners may land direct at the grounds and discharge their cargo of exhibits, thus requiring but one handling after they have been loaded on the boat. A standard gauge railroad has been completed from the docks to the Exposition grounds, immediately adjacent, and spur tracks will provide easy approach to all of the main exhibit palaces and to other important points throughout the entire Exposition reservation.

It is interesting to note in this connection that the main line track will not be torn up on the opening of the Exposition, but that it will be buried, transversed by the foot paths and roads of the Exposition, and uncovered again when the doors of the Exposition are closed December 4th, 1915, thus providing against the necessity of rebuilding the line and avoiding its exposure to the scenic disadvantage of the landscape garden scheme.

Another element which is peculiar to the Exposition in San Francisco arises from the fact that there is no physical connection between the grounds and any railroad (except of course the Exposition's terminal line already described), and in order that carloads of building material not arriving by water, and later on, exhibits which come by rail could be delivered direct, a freight ferry slip has been constructed. Car barges operated by railway companies whose terminals are across the Bay in Oakland, are already landing at this slip. Some are equipped with their own motor power and others are moved by steam tug boats.

It is estimated that the gross weight of exhibits will reach 70,000 tons coming from every part of the world in quantities of from small packages to a complete and modern locomotive of the largest type. From 50,000 to 60,000 individual exhibitors will contribute.

A book of instructions is being compiled by the Traffic Department of the Exposition and will soon be ready for distribution which will cover all queries that may possibly arise in the minds of exhibitors concerning the handling of their material, its treatment on arrival in San Francisco and all such other data as it may be essential to know. Among other things the booklet will cover the following subjects:

United States customs regulations applying to exhibits.

Names of carriers, both railway and express, bonded to carry dutiable goods in bond.

List of important ports of entry.

Names of steamship lines offering direct service to San Francisco with ports of sailing.

Rates made by various carriers, both land and water, on exhibits.

Rules and regulations of carriers governing return shipments.

Rates for deliery of goods on Exposition grounds.

Rules and rates governing the removal of exhibits.

Instructions for packing, marking and labeling packages.

The Exposition Company, through its railroad department will issue return bills of lading to owners and exhibitors, and take complete charge of the exhibits from exhibit space after goods have been packed and made ready for return shipment. The most earnest efforts of the Traffic Department will be devoted to the proper handling of every shipment and each detail connected with the movement to and from the Exposition and the equitable treatment of every exhibitor whether his exhibit be large or small. In short, the Exposition Traffic Department will be at the service of the exhibitor and will handle for him all matters pertaining to the transportation of his shipment to and from the Exposition.

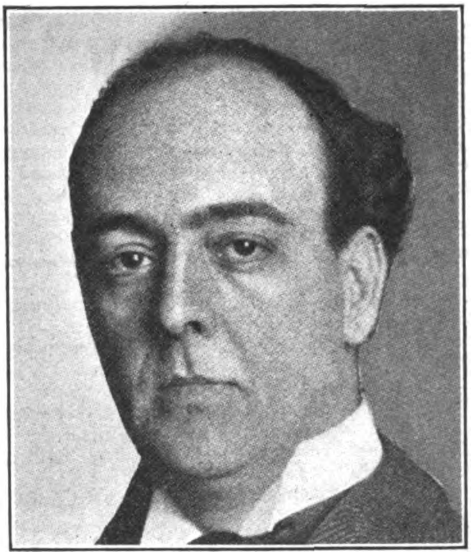
Thus it is seen that the Traffic Department will handle and come into close contact with almost every branch of transportation, including the operation of a busy terminal railway connecting with steamship docks, car barge freight slips, operating freight warehouses, storage warehouses, draying and trucking and motor buses, handling freight and passenger traffic in connection with steam and electric railways, steamships and ferries.

Missouri.

PROMINENT railroad officials told the State Public Service Commission on December 31st, that the railroads of Missouri are on the verge of bankruptcy, and unless business conditions for them improve several will go into the hands of receivers.

These declarations were made while the officials of the Missouri Pacific, Wabash, Chicago and Alton, and the Burlington were explaining to the Commission why it is necessary to take off the mail and passenger trains, which leave St. Louis at 11:30 P. M., for Kansas City. The companies announced they would discontinue those trains January 4th, to cut down expenses.

Personal



Frederic A. Delano.

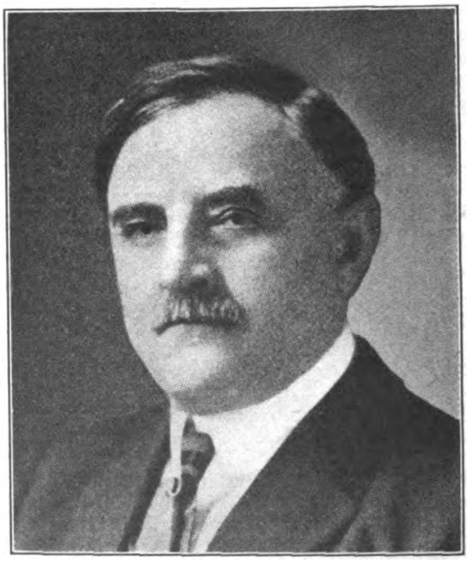
FREDERIC A. DELANO has resigned as president and receiver of the Wabash Railroad, to become president of the Chicago, Indianapolis and Louisville. Mr. Delano was born September 10, 1863, at Hong Kong, China. After graduating from Harvard University in 1885, he entered railway service as machinist apprentice in the shops of the Chicago, Burlington and Quincy. He remained with this road until January, 1905. From 1887 to 1889, he was head of the bureau of steel rail inspection tests and records; from 1889 to 1890, assistant to second vice-president; from 1890 to 1899, superintendent of freight terminals; from 1899 to 1901, superintendent of motive power, and from 1901 to 1905, general manager. He left the road in the latter year to become consulting engineer to the War Department and Philippine Commission, which position he held from March 15th to May 1st, of that year, when he again entered the services of the Wabash Railroad as first vice-president. Five months later, he was made president and for the past two years has also been receiver of that road. Mr. Delano was also president of the Wheeling and Lake Erie from 1905 to 1908, and has been president of the Wabash-Pittsburgh Terminal since 1905. He is a member of the Board of Overseers of Harvard College, of the American Society of Civil Engineers, of the American Institute of Mining Engineers of the Western Society of Engineers, of the Franklin Institute, of the American Railway Master Mechanics' Association, of the Master Car Builders" Association, of the International Railway Congress, and of the Western Railway Club.

Judge Adams, in accepting the resignation of Mr. Delano as receiver of the Wabash Railroad, paid him a high tribute for his honest, faithful and efficient work in connection with that property. He said:

"I take this occasion to express my personal regret that Mr. Delano feels impelled to tender his resignation as one of the receivers. He has been an honest, faithful and efficient public servant, and deserves well of all persons financially interested in the Wabash Railroad. The court will greatly miss his active assistance and wise counsel in the further administration of the trust. His most generous offer to render such assistance in the future as the exigencies of the case may from time to time require, is highly appreciated, and if at any time occasion arises when his great experience and knowledge will aid in the administration of the trust, the court, I am sure, will not hesitate to avail itself of his offer. I bespeak for him the greatest success in any field of enterprise to which he may devote himself."

Edward M. Hyzer.

EDWARD M. HYZER, who was recently elected vice-president of the Chicago Northwestern Railway Company, entered railway service in 1897, when ne took charge of the Wisconsin legal business of the Northwestern road under the then Wisconsin State attorney, Mr. John T. Fish, who was an able and experienced railroad lawyer, having been for a number of years general counsel for the Chicago, Milwaukee and St. Paul. Upon the death of Mr. Fish in 1900, Mr. Hyzer succeeded him as Wisconsin attorney for the Northwestern Road and conducted the legal business of that Company in that State until 1909, when he became general counsel of the Road with headquarters at Chicago, succeeding Honorable Lloyd W. Bowers, who retired from the position as general counsel to accept position of general solicitor of the United States at the request of President Taft. Mr. Hyzer's promotion to the position of vice-president does not affect his position as general counsel, the duties of which office he still retains.



EDWARD M. HYZER.

John Howe Peyton.

JOHN HOWE PEYTON, who on January 1st, became president and general manager of the Nashville, Chattanooga and St. Louis Railway, was born in Virginia in 1864. He is of English descent his ancestors having settled in the eastern part of Virginia in the seventeenth century. During his youth, he spent five years at Roanoke College, Salem, Va., taking the ordinary academic training. In 1881, when seventeen years of age, he secured a position as rodman on a corps of engineers under General Gabriel C. Wharton, an old ex-confederate general and since that time has devoted himself almost exclusively to engineering work. In 1902, he entered the services of the Louisville and Nashville as a locating engineer and in 1904, became principal locating engineer of this road. In 1907, he issued the first edition of "The American Transportation Problem," dealing with a comparison between transportation facilities afforded by inland waterways and modern railways; a second edition of this book was issued in the fall of 1909. In 1910, he became assistant to president of the Louisville and Nashville Railroad and in 1912, assistant to president and chief engineer of construction of that company. During the past two years he has been acting as assistant to president and chief engineer of construction of the Louisville and Nashville, having had under his personal charge the construction of about 500 miles of railroad, all of which are low grade lines and about 200 miles of which are double track. All this work has been and is being carried on in accordance with the most modern standards. Mr. Peyton's headquarters are at Nashville, Tenn.

William Frazer Owen.

WILLIAM FRAZER OWEN, who has recently been appointed receiver of the New Orleans, Mobile and Chicago Railroad Company, was born at Mobile, Ala., March 31, 1856. He entered the services of the New Orleans, Texas and Mobile Railway in 1871, and in 1880 joined the forces of the Morgan's Louisiana and Texas Railroad and Steamship Company and the Louisiana Western Railway Company, as master of transportation. In 1885, he was made superintendent of these companies and from February 1, 1906 to July 15, 1907, was president of a projected road known as the New Orleans, Crowley and Western Railway. On the latter date he became assistant to the president of the Mobile, Jackson and Kansas City Railroad and on September 1, 1907, was made general manager of this road. On December 1, 1909, the Mobile, Jackson and Kansas City was reorganized, becoming the New Orleans, Mobile and Chicago Railroad and at that time Mr. Owen was made vice-president and general manager, which position he held until January 1, 1912, when he became president and general manager. He continued as president of the road until his recent appointment as receiver.

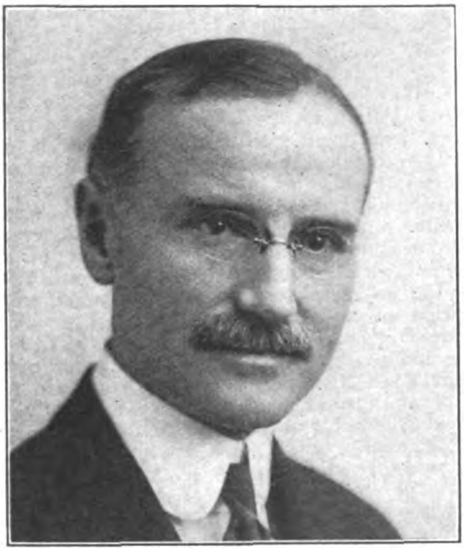
G. F. Turley.

G. F. TURLEY, who has been appointed general manager of the Virginian-Carolina Railway and the New River, Holston and Western Railroad, was born at Oakland, Md., December 20, 1867. After a public school education, he entered the services of the Shenandoah Valley Railroad in 1882, as clerk in the traffic department. From 1887 to 1889, he was clerk and telegraph operator at Hagerstown, Md., jointly for the Cumberland Valley and the Shenandoah Valley roads, and in 1889, became operator and chief clerk to the trainmaster and later despatcher and chief despatcher for the Shenandoah Division of the Norfolk and Western Railway. In 1902, he was promoted to the position of assistant trainmaster of the Pocahontas Division of the Norfolk and Western Railway and in 1905, was made trainmaster of the Shenandoah Division of the same road. In 1912, he became trainmaster of the Scioto Division of the Norfolk and Western, with headquarters at Portsmouth, Ohio. This position he held until his recent appointment as general manager.

G. F. TURLEY.

Robert Stevens Parsons.

ROBERT STEVENS PARSONS, who was recently made general manager of the Erie Lines West, with headquarters at Cleveland, Ohio, is a graduate of Rutgers College, having received the degree of civil engineer from this institution. He entered railway service in 1895, as rodman for the Erie Railroad and in 1896 became assistant engineer. In 1899 he accepted the position of division engineer for the New York, Susquehanna and Western but in 1903, returned to the Erie as engineer of maintenance of way. From this position he was promoted to that of assistant general superintendent, in 1906 and in 1907 was made superintendent of the Susquehanna Division, and three years later, superintendent of the New York Division. In 1913, he became assistant general manager, which position he held at the time of his recent promotion. Mr. Parsons is a member of the American Society of Civil Engineers.



J. T. Conley.

J. T. CONLEY, who on January 1st, became general freight agent of the Chicago, Milwaukee and St. Paul Railway, with headquarters at Chicago, began his railway service with this road as telegraph operator at La Crosse, Wis. Later he became traveling freight agent at Milwaukee and from this position, was promoted to division freight and commercial agent at St. Paul. In 1902, he was appointed assistant general freight agent at Minneapolis, which position he held until his recent appointment.

William C. Barnes.

WILLIAM C. BARNES has been appointed general freight agent of the El Paso and Southwestern System, with headquarters at El Paso, Texas. He was born February 9, 1877, at Senoia, Ga. He began railway work on October 21, 1891, as a mailing clerk in the accounting department of the Texas & Pacific, at Dallas, Texas, and was subsequently clerk in various capacities in the freight, accounting and freight claim departments of that road. In November, 1904, Mr. Barnes went with the El Paso-Northeastern System, now part of the El Paso-Southwestern System, as a rate clerk in the traffic department at El Paso, and he was made chief clerk to the general freight agent on January 1, 1908. From March 1, 1912, until January 1, 1914, the date when his appointment as general freight agent became effective, he was assistant general freight agent at El Paso.

John Marcus Davis.

JOHN M. DAVIS, who has recently been appointed assistant general manager of the Baltimore and Ohio Railroad, with headquarters at Cincinnati, was born November 5, 1871. He entered railway service in 1888 as a freight brakeman on the San Antonio and Arkansas Pass Railway. From September, 1891, to October, 1894, he was stenographer to the superintendent of the Gulf, Colorado and Santa Fe Railway, at Temple, Texas. Resigning this position, he became chief clerk to the superintendent of the Mexican Central Railway, at Tampico, Mexico, where he remained until October, 1895; and from then until March, 1896, was employed in the general manager's office of the Great Northern Railway, at Duluth, Minnesota.

Filling other positions of a clerical nature, Mr. Davis was made assistant superintendent of the Great Northern Railway, at Melrose, Minnesota, which position he filled from March to July, 1898. From that date until January, 1900, he was superintendent of the Breckenbridge and Montana Divisions of the Great Northern. Mr. Davis then entered the service of the Erie Railroad as superintendent at Scranton, Pa., where he was stationed until March, 1902, when he became superintendent of the Union Steamboat Line of the Erie, at Buffalo.

In August, 1902, he became superintendent of the Allegheny Division of the Erie, remaining until May, 1903. Returning to the Great Northern Railway, he was successively superintendent of the Superior, Dakota and Minot Divisions until July, 1905, when he was promoted to assistant general superintendent of the Central District, at Minot, N. D. Next he was assistant general superintendent of the Oregon Short Line, Union Pacific and Southern Pacific lines, with headquarters at Salt Lake City, until November, 1907, after which time he was acting general superintendent until June, 1908. Mr. Davis was next promoted to general superintendent of the Oregon Short Line and Southern Pacific Company in Nevada, filling such position until June, 1910. From this latter date to the present time he has been general superintendent of the Central District of the Southern Pacific Company, at San Francisco.

W. W. Miller.

W. W. MILLER, who on January 1st, became general freight agent of the Missouri, Kansas and Texas Railway with headquarters at St. Louis, entered railway service in the local freight agent's office of the St. Louis, Iron Mountain and Southern at Cairo, Ill., on August, 1883. In 1885, he accepted a position in the general freight office of the Texas and St. Louis Railway at Texarkana, Texas, and in 1889, was transferred to the general freight office of the Missouri, Kansas and Texas Railway at Sedalia, Mo. In 1893, he became commercial agent of this road at Kansas City and in 1896, general livestock agent at Fort Worth, Texas. In 1900, he was appointed assistant general freight agent with headquarters at Chicago and in 1902, was transferred to Kansas City, and in 1908 to St. Louis, where he remained until his recent promotion.

R. D. Williams.

R. D. WILLIAMS, who has been appointed assistant general freight agent of the Missouri, Kansas and Texas Railway, with headquarters at St. Louis, began his railway service with this road in 1883 as operator at Montrose, Mo. On January 1, 1897, he went to the local freight office at Kansas City as a clerk and on June 1, 1899, became chief clerk in the assistant general freight agent's office at that point. He was appointed traveling freight agent at Kansas City, January, 1907, which position he held until October, 1909, when he was transferred to St. Louis as chief clerk in the general freight office.

A. M. Burt.

A. M. BURT, who became chief engineer of maintenance and way of the Northern Pacific Railway Company, on January 1st, was born at Syracuse, New York, in 1866. He was educated in common schools and in preparatory schools in New York and Massachusetts, and entered railway service March, 1885, with the Engineering Department of the Colorado Midland Railway and served in various capacities from Rodman to Assistant Engineer with the Colorado Midland; Adirondack & St. Lawrence; Chicago & Northwestern; and Northern Pacific until December, 1897. He was appointed supervisor of Bridges and Buildings of the Northern Pacific Railway, at Minneapolis, Minn., in January, 1897, and served in this capacity until March 1, 1902. Appointed assistant superintendent, Minnesota Division, headquarters at Grand Forks, N. D., March 1st, 1902; served in this capacity until October 10, 1903. Division superintendent successively at Jamestown, Fargo, Missoula and Spokane, October 10, 1903 to December 31, 1913.

F. T. Beckett.

F. T. BECKETT, who on November 1st, was appointed engineer maintenance of way, of the Chicago, Rock Island and Pacific Railway, was born in 1870, at Frankfort, Kansas. He is a graduate of Kahoka College, Kahoka, Mo., and also of Valparaiso University, Indiana. He entered railway service in 1897, as chainman for the Atchison, Topeka and Santa Fe Railway at Corrallton, Mo., and later became rodman and then transit man and inspector for this road. In 1900 he joined the forces of the Chicago, Burlington and Quincy as assistant engineer, but in 1902, returned to the Santa Fe in the same capacity. In 1903, he was made assistant engineer in charge of maintenance work of the Rio Grande Division of the Santa Fe and in 1906, became assistant engineer on construction for the Western Oklahoma Railway, which is a part of the Santa Fe system. In 1907, he was made division engineer of the Oklahoma Division of the Atchison, Topeka and Santa Fe, engaged in maintenance work, and in 1908, became resident engineer of the E. P. & S. W. system, in charge of maintenance and construction work, which position he held at the time of his recent appointment.

W. G. Coughlin.

W. G. COUGHLIN, who on December 1st, was promoted to engineer maintenance of way of the Pennsylvania Railroad, was born in Florence, N. J., in 1862. He received his early education in the private and public schools of that vicinity and in 1875, entered the Farnum School in New Jersey.

Mr. Coughlin was a member of the exposition which was sent to South Africa in 1878, to construct the Midera and Mamore Railway in Brazil. He returned to the United States in 1879 and entered the service of the Pennsylvania Railroad in the construction department. In 1883, he was transferred to the position of assistant supervisor of the Baltimore Division and in 1886, was promoted to supervisor of the West Jersey and Seashore Railroad. In 1893, he returned to the Baltimore Division as division engineer and in 1900, was promoted to principal assistant engineer of the Erie Division of the Northern Central Railway. In 1903, he was made superintendent of the Elmira Division, and in 1907, became superintendent of the Renovo Division. He held this position until his recent promotion.

E. R. Scoville.

E. R. SCOVILLE, who is promoted from superintendent of the Ohio Division of the Baltimore and Ohio Southwestern Railroad at Chillicothe, O., to membership on the General Safety Committee, of the Baltimore and Ohio System, effective January 1st, was born August 1, 1858, at Bellefontaine, O. He first entered railroad service in September, 1876, as telegraph operator in the employ of the Big Four Railroad. January 10, 1879, he accepted a position with the Western Union Telegraph Company as operator, entering the service of the Baltimore and Ohio Southwestern on October 15th, of that year, in the same capacity. March 2, 1880, Mr. Scoville was advanced to block dispatcher, becoming train dispatcher at Chillicothe May 1, 1882. He was promoted to chief dispatcher there November 15, 1890, and was made train master of the Ohio Division, November 11, 1893. January 1, 1900, he was advanced to superintendent of telegraph at Cincinnati, being made superintendent of the Springfield Division at Flora, Ill., on November 8th, of that year. May 1, 1902, Mr. Scoville was made superintendent of the Illinois Division at Washington, Ind., having been transferred to Chillicothe, November 1, 1905, in which position he remained until his present promotion.

John Moore James.

JOHN MOORE JAMES, who has been made assistant superintendent of the Pittsburgh Division of the Pennsylvania Railroad, was born at Wellsville, Ohio, September 10, 1875. Was educated in the public schools of Wellsville and Ohio State University.

Mr. James entered the service of the Pennsylvania Railroad Company as machinist apprentice, in the Altoona shops, in 1893. He was appointed assistant foreman of Car Inspectors, Washington, D. C., May, 1899, and foreman of the Anacosta shops of the Philadelphia, Baltimore and Washington Railroad, January, 1900. He became general foreman, Washington, D. C., May, 1900; general inspector of the Buffalo and Allegheny Valley Division, October, 1900, and assistant engineer of motive power, Buffalo and Allegheny Valley Division, January, 1912. He was appointed master mechanic of the Olean shops, Buffalo and Allegheny Valley Division, on December, 1902; transferred to master mechanic of the Buffalo Division, November, 1908, and to the West Philadelphia shops, May 1, 1911.

On January 1, 1912, Mr. James was promoted to superintendent of motive power of the Western Pennsylvania Division, with headquarters at Pittsburgh, Pa., and on December 1, 1913, he was appointed assistant superintendent of the Pittsburgh Division.

F. B. Lincoln.

F. B. LINCOLN, who became general superintendent of the Erie Division of the Erie Railroad on January 1, 1914, was born in New York City on October 9, 1867. He was educated in the public schools of New York and Connecticut and at New York University. He entered railway service in the engineering corps of the Erie Railroad in 1887. He occupied respectively the positions of rodman, transitman and resident engineer, until June, 1892, when he became assistant engineer of the Allegheny Division. The latter part of the same year, he was made assistant engineer of the Susquehanna Division, which position he occupied until 1895, when he was made trainmaster of the Toby branch of the Erie Railroad in charge of maintenance and operating. In 1897, he became agent for the Erie Railroad at Salamanca and in 1898, accepted the position of superintendent of the Bloomsburg Coal Company. In March, 1902, he was made general manager of the Buffalo and Susquehanna Coal and Coke Company, and in October of the same year, became special agent for the vice-president and general manager of the Erie Railroad. In 1904, he went to the Delaware and Hudson Company as superintendent of the Susquehanna Division and the following year became superintendent of construction for that road. In October, 1905, he left railway service to become superintendent of construction of the O'Rourke Engineering and Construction Company, engaged on Grand Central Terminal work at New York City. This position he held but a few months, again entering railway service in March, 1906, as assistant to the receiver of the Pittsburgh, Shawmut and Northern Railway, which position he held until his recent appointment.

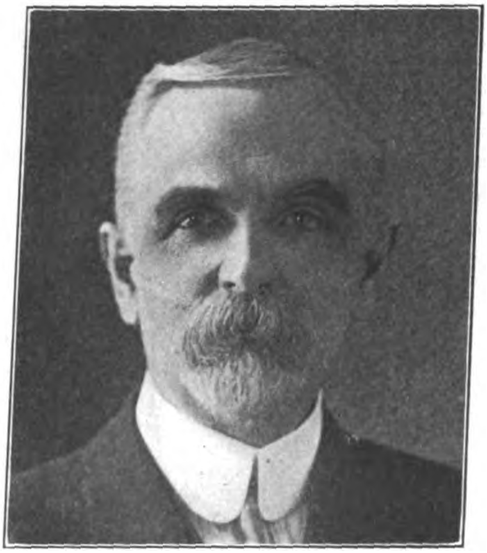
John Daniel Stack.

INCIDENT to the promotion of E. R. Scoville, formerly superintendent of the Ohio Division of the Baltimore and Ohio Southwestern Railroad to membership on the newly-organized General Safety Committee, J. D. Stack has been promoted to superintendent, succeeding Mr. Scoville. Mr. Stack was formerly assistant superintendent of the Toledo Division of the Cincinnati, Hamilton and Dayton Railway, a Baltimore and Ohio Line, with headquarters at Dayton, Ohio.

John Daniel Stack, the new superintendent, began his railroad career as a trucker, fireman and switchman on the Louisville, New Albany and Chicago Railroad, where he was employed from 1885 to 1887. He was telegraph operator on the Vandalia Line and the Big Four until 1889 and was later a train dispatcher at Bloomington, Ind. From 1891 to 1892, he was dispatcher and afterwards chief dispatcher of the Fort Worth and Rio Grande Railway, at Fort Worth, Texas, and from 1892 to 1895 was train dispatcher of the Atlantic and Pacific Railway, at Needles, Colorado.

His next railroad service was as train dispatcher of the Illinois Central at Centralia, Ill., Jackson, Miss., and Memphis, Tenn., where he was employed from 1895 to 1897; and from the latter date until 1900 he was train dispatcher of the Oregon Short Line and the Oregon Railroad and Navigation Company and the Union Pacific at Pocatello, Idaho. For a period of one year, or until 1901, Mr. Stack was dispatcher of the Southern Railway at Princeton, Ind., and for the next year filled the same position with the Denver and Rio Grande Railroad, at Minturn, Colo. From 1902 to 1904 he was dispatcher and chief dispatcher of the St. Louis and San Francisco road, at Springfield, Mo., and during the next year was train master of the I. M. & S. Road at Monroe, Louisiana. He was chief dispatcher, assistant superintendent and superintendent of the Colorado and Southern at Trinidad, Colo., from 1905 to 1909, and assistant superintendent of the Southern Pacific Company at Sacramento, Cal., for the next year. From 1910 to 1911 he was assistant general manager of the Oregon-Washington Railroad and Navigation Company and the Southern Pacific Lines in Oregon, with headquarters at Portland, Oregon. At the time of the separation of these lines, in 1911, Mr. Stack continued as superintendent and assistant general manager of the Oregon-Washington Line, resigning several months ago to enter the service of the Baltimore and Ohio System at Dayton, Ohio.

L. A. Lambert.



L. A. LAMBERT.

L. A. LAMBERT, who has recently been made auditor of miscellaneous receipts and accounts of the Baltimore and Ohio Railroad, was born on January 26, 1856, at Philadelphia. He entered railway service in 1873, as clerk in the freight department of the Baltimore and Ohio, and in 1877, became cashier of the express department of that road. In 1881, he was promoted to assistant to the general manager of the Baltimore and Ohio Express Company, and from 1884 to 1887, was superintendent of the same organization. In the latter year, the Baltimore and Ohio Express Company was sold to the United States Express Company, and from that year until 1890, Mr. Lambert was superintendent of the United States Express Company, when he resigned to engage in farming, although from that time until 1899, when he again regularly entered railway service as a traveling auditor of the Baltimore and Ohio's accounting department, he was constantly engaged in special work either for that road or for the express company. In 1902, he became chief clerk to the auditor of revenue and in 1903, his duties were made to include that of special agent. In 1907, he was promoted to special accountant, which position he held at the time of his recent appointment.

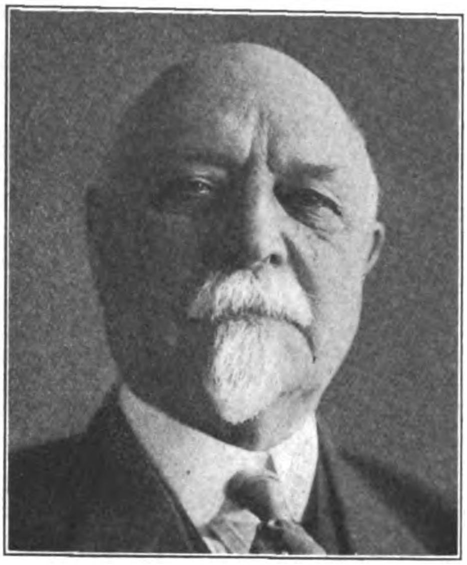
Obituary

Charles E. Ways.

CHARLES E. WAYS, who died in Baltimore on January 2nd, was widely known in railroad circles and it is believed that he enjoyed the distinction of the longest record of any of the officials of an American railroad, and his career was at the same time one of the most interesting in relation to the development of the country's railroads.

Mr. Ways was a native of Frederick County, Maryland, where he was born in 1838. He entered the service of the Baltimore and Ohio railroad in 1853, as a telegraph operator at Martinsburg, W. Va., and later at Frederick Junction. He became a pay-roll clerk on the Cumberland Division in 1859, and in 1861 was transferred to Washington as an operator. He was made chief operator with offices at Baltimore, in 1863. Four years later, Mr. Ways was appointed general agent of the Baltimore and Ohio at Hagerstown and was promoted in 1878 to division freight agent. He was advanced to assistant general freight agent in October, 1881, and in March, 1888, became general freight agent. He was promoted in 1897 to assistant general freight traffic manager, the position which he held until his death.

Probably no other railroad official in the country has had so interesting a career in transportation service as has Mr. Ways. In his earlier years of railroad service he was identified with the evolutionary period of the country's present railroad system, and during his service with



CHARLES E. WAYS.

the Baltimore and Ohio he lived to see that road developed from a small single-track line into one of the leading public carriers of the country.

Recently, Mr. Ways was presented with a silver medal in the form of a perpetual pass over the lines of the Baltimore and Ohio system, the management having tendered him this token of appreciation of his long years of active and useful service.

Commencing with the historic raid by John Brown and his band of abolitionist followers upon the United States arsenal at Harper''s Ferry, where Mr. Ways was employed at the time as a telegraph operator, the experiences of the late railroad official read like fiction. Mr. Ways sent the telegram which announced to the outside world the news of the attack upon Harper's Ferry, itself one of the most momentous events in the history of the United States.

Edmund C. Leavenworth.

THE Grand Rapids and Indiana Railway Company has lost a valued official in the death of their general freight agent, E. C. Leavenworth, who died on January 5th, after a short illness. His integrity, ability and loyalty to the interests he served made him a valuable officer and his loss will be deeply felt by all his associates, both in and out of the railway service.

Mr. Leavenworth was born in Detroit, Mich., on January 21, 1852. On September 18, 1871, he entered railway service with the Michigan, Lake Shore Railroad as agent at Allegan, Mich., this road being affiliated with the Grand Rapids and Indiana.

He remained at Allegan in this capacity until September 1, 1879, when he became traveling freight agent for the Grand Rapids and Indiana Railroad with headquarters at Grand Rapids. On January 1, 1881, he entered the general freight office in a clerical capacity and on January 1, 1884, he became chief clerk from which position he was promoted on May 1, 1889, to that of general freight agent. At the time of his death he was in his forty-third year of continuous service with the Grand Rapids and Indiana and affiliated lines.

E. J. Chism, general freight and passenger agent of the Chesapeake Steamship Co., died in his office at Baltimore, Md., on Wednesday afternoon, December 10th, from organic heart disease. Mr. Chism was between 58 and 59 years of age and had been with the Chesapeake Steamship Company for more than forty years. He was a member of the American Association of General Passenger & Ticket Agents, the Fraternal Society of the American Association of General Passenger & Ticket Agents and the American Association of Freight Traffic Officers and was prominently identified with the transportation business from the port of Baltimore. Mr. Chism was held in high personal esteem by the steamship and railroad fraternity in general and by Mr. Key Compton, president of the Chesapeake Steamship Company in particular.

James H. Crawford, secretary, treasurer and general manager of the Shippers' Refrigerating Car Company, Chicago, died on December 11th, at Chicago.

Dwight A. Jones, president of the Mississippi River & Bonne Terre, with headquarters at New York, died on December 7th, at St. Louis, Mo., at the age of 59.

Henry Martin, vice-president and general manager of the International & Great Northern Ry., was drowned December 5th, a result of the floods in southern Texas, which have caused great loss of life and property damage. Mr. Martin was crossing the Little Brazos River at Hearne, Tex., when the rowboat in which he was riding capsized. Mr. Martin was born in Springfield, Tenn., January 22, 1864. Early in life he entered the railroad service. For twenty years he was connected with the Queen

EDMUND C. LEAVENWORTH.

& Crescent route, later for six years with the Mobile & Ohio R. R. In 1908 he became connected with the International & Great Northern Railway and for the last three years he has been located at Houston, being in charge of the general offices.

H. E. Montague, traveling passenger agent of the Southern Pacific Company, according to press reports, was shot and instantly killed on December 1st, while trying to disarm a highwayman, who was holding up the passengers on a Southern Pacific westbound train, thirty miles east of Los Angeles, Cal.

Charles S. Musson, traveling freight agent of the New York, Chicago & St. Louis R. R., with headquarters in Chicago, died at his home in a suburb of that city, December 14th. He was born in Toronto, Ont., December 23, 1844, and had been with the railroad company since 1888.

A. B. Phillips, general foreman of the Denver & Rio Grande R. R., Salt Lake City, Utah, died in that city December 6th.

Mitchell D. Rhame, for many years connected with the Engineering department of the Chicago, Milwaukee & St. Paul Railway, died at his home in Minneapolis, on December 9, 1913.

Mr. Rhame was born October 12, 1846, at East Rockaway, New York, graduated from Yale in 1869 and then took a one-year post-graduate course at the Sheffield Scientific School. Upon leaving school Mr. Rhame entered the service of the United States Government as assistant engineer and was assigned to a survey of the Illinois River with headquarters at Peoria. While at Peoria, Mr. W. W. Folwell, president of the University of Minnesota, became interested in him and offered him the position of professor of mathematics and engineering at that institution, which position he held from 1872 to 1880. After severing his connection with the University of Minnesota, Mr. Rhame entered the services of the Chicago, Milwaukee & St. Paul Railway as assistant engineer, on March 4, 1881, afterwards holding the titles of division engineer from 1891 to 1905, engineer of construction, 1905 to 1908, district engineer from 1908 to September, 1913, when he resigned on account of ill health. Among the more important works handled by Mr. Rhame during his connection with this road were the building of the South Minneapolis shops and terminal facilities, the construction of various new lines, viz.: Farmington to Mankato, Faribault to Zumbrota, Woonsocket to Wessington Springs; Bowdle, S. D., to the Missouri River, the revision and double tracking of the River Division from St. Paul to La Crosse, and finally the construction of 200 miles of the Puget Sound line from the Missouri River to the Montana State line near Marmarth.

George Stilson, roadmaster of the Grand Trunk Railway, at Hamilton, Ont., died December 5th.

David S. Sutherland, general agent and former division superintendent of the Michigan Central Railroad, died at his home in Detroit, Mich., December 17th, aged 64 years.

John W. Thomas, Jr., president and general manager of the Nashville, Chattanooga & St. Louis, died on December 17th, at his home in Nashville, Tenn. He was a son of the late Major J. W. Thomas, former president of the road. J. W. Thomas, Jr., was born at Murfreesboro, Tenn., in 1856. After graduating from Vanderbilt College, he entered railroad service in 1878, and for the next three years was a locomotive engineer on the Nashville, Chattanooga & St. Louis. In the succeeding two years he was a trainmaster; for two more years, engineer, conductor, operator and office man; for three years to 1889, purchasing agent and secretary to the president and general manager. For the next ten years he held the positions of assistant general manager and purchasing agent, becoming general manager in 1899. In 1906 he advanced to the presidency of the road, holding also the position of general manager.

Financial

The Outlook for 1914.

UNDOUBTEDLY a brighter financial outlook marks the new year's opening. The disturbing influences which were so characteristic of the year 1913, have in many instances, largely spent their force and a more peaceful and constructive period during the current year, is anticipated.

Railway officials generally, while not anticipating a rapid recovery, have hopes that the situation will continue to improve and that normal conditions may arrive towards the latter part of the year. Certain it is, that much depends upon the decision of the Interstate Commerce Commission in the advance rate case. Should their attitude be liberal in this matter, and should the carriers receive the full five per cent increase which they have asked for, this in itself, would do much towards bringing back a nation-wide prosperity. Railway securities during the past year have virtually been a drug on the market, and, in fact very little has been done in the way of issuing new securities, except under the spur of an imperative and immediate necessity.

However, the outlook is brighter. The passage of the tariff bill, which has now been long enough in effect to fairly measure its influence, has not brought about the serious disturbances which were prophesied for it. While readjustments in many lines of business still continue and may be expected for some time to come, they have not been of such a drastic character, as was at one time feared, and it is hoped that they will decrease in severity from now on. The passage of the currency bill in its final form, has caused a sigh of relief to go up from financial quarters. At one time it looked practically impossible that a measure so sane, and in the main beneficial to business, could have passed the present Congress. The administration is undoubtedly to be congratulated upon the results of its efforts, and prominent financiers have not been slow in voicing their praise of the new law.

The country is, of course, fundamentally sound. Its natural resources are enormous and to a large extent, remain practically undeveloped. Furthermore, it is still young enough to feel quickly the stimulation of restored confidence and recent developments point to a better feeling among business men and financiers. Unless the unexpected happens, the year 1914 should witness the development of sounder financial and business policies with their accruing beneficial results and should see the prosperity of the country on a more stable basis than it has been for a number of years past. Big business is, in itself, aiding the restoration of this confidence by its voluntary action to conduct its activities strictly along the lines of the Sherman anti-trust law, as evidenced by the action recently taken by the American Telephone and Telegraph Company, by J. Pierpont Morgan and other prominent financiers and by the New Haven system.

A brief review of the twelve months recently ended, shows it beginning under a sharp momentum but slackening by the middle of the year and reaching a low point of depression towards its close. Besides the railway situation, politics, new business legislation, conditions in Mexico and the partial failure of the grain crops all had their effect.

Bank clearings roughly measure the general business tendency. In the first two months they gained 6.5 per cent. By the end of June this gain had disappeared. In the last half of the year total clearings have shrunk 5.1 per cent, resulting in net loss of three per cent for the twelve months. It is to be noted, however, that all the loss is confined to New York, clearings outside slightly more than breaking even. Last year New York gained 8.6 per cent and the rest of the country 8.9 per cent over 1911.

New financing during the year particularly emphasizes the adverse monetary and investment conditions which existed. Capital applications announced by American railroad and industrial corporations during the past twelve months represented $1,645,736,200. This compares with $2,253,587,300 in the previous year. No attempt is made in this compilation to distinguish between capital required for new enterprises or extensions and that necessary to pay off or refund maturing obligations, which would probably furnish about twenty or thirty per cent of the total. In this connection, there is almost $600,000,000 of corporate securities maturing in 1914, including $400,000,000 railroad bond and short-term notes.

The following table, compiled from the records of "The Journal of Commerce and Commercial Bulletin" shows a summary of the year's financing, with comparisons:

RAILROADS.

	1913.	1912.	Changes.
Bonds ...	$414,081,000	$503,714,500	—$89,633,500
Notes	398,361,200	346,310,300	+ 52,050,900
Stocks ...	141,491,100	246,027,000	—104,535,900
Total ..	$953,933,300	$1,096,051,800	—$142,118,500

INDUSTRIAL CORPORATIONS.

Bonds ...	$225,190,000	$379,354,700	—$154,164,700
Notes	156,245,000	120,075,000	+ 36,170,000
Stocks ...	310,367,900	658,105,800	— 347,737,900
Total ..	$691,802,900	$1,157,535,500	—$465,732,600
Grand t'l	$1,645,736,200	$2,253,587,300	—$607,851,100

The foregoing totals do not include State and municipal bonds. A compilation covering the latter appears in an adjoining column.

A few Canadian railroads—Canadian Pacific, Canadian Northern and Grand Trunk—are included in the total because of their close connection with the trade and commerce of the United States.

NEW ISSUES FOR TWELVE MONTHS.

The principal divisions of the new securities, including bonds, notes and stocks, for twelve months:

	1913.	1912.	Changes.
Railroads .	816,332,100	$716,628,600	— $99,703,500
Tract'ns .	137,601,200	379,433,200	— 241,822,000
Pub. util..	299,524,700	384,244,200	— 84,719,500
Mfg. Cos.:			
Iron & st'l	16,990,000	83,121,500	— 66,131,500
Textiles .	27,125,000	43,008,000	— 15,883,000
Miscell. .	184,364,200	332,651,500	— 148,287,300
Miscell. ..	163,799,000	314,510,300	— 150,711,300
Total .	$1,645,736,200	$2,253,587,300	—$607,851,100

For the month of December:

Railroads .	$27,832,000	$4,650,000	+ $23,182,000
Tract'ns .	11,024,200	66,774,000	— 55,749,800
Pub. util..	11,884,000	38,874,000	— 26,990,000
Mfg. Cos.:			
Iron & st'l	250,000	2,500,000	— 2,250,000
Textiles .	700,000	6,550,000	— 5,850,000
Miscell. .	4,559,200	24,340,800	— 19,781,600
Miscell. .	16,900,000	18,800,000	— 1,900,000
Total ..	$73,149,400	$162,488,800	— $89,339,400

The "Journal of Commerce" in discussing the above statistical statement, has the following to say:

"Dividing the year into two parts, the first six months contributed about seventy per cent of the total. Upon the whole, circumstances here and in Europe did not favor those seeking new capital and applications to this end were deferred wherever possible. In fact, only where the financial needs were absolutely urgent and could not be delayed did the transportation and industrial interests endeavor to satisfy their requirements, so that temporary financing, so-called, in Wall Street was quite a feature in some months.

"Bank officials were, moreover, recommending borrowers to go slow in various directions. During the early months corporations hitherto enjoying the highest standard of credit, like the St. Paul, New York Central and Lake Shore railroads were compelled to pay the dearest rates in a number of years. In Europe, the congestion of securities was even greater than here, and many of the later syndicates were left with seventy or ninety per cent of the securities they undertook to float. In no small number of cases short term notes have been renewed more than once and railroads are desirous of replacing them with long time bonds, first to secure accommodation at lower rates of interest and second to prevent, if possible, the constant renewals of short term obligations, so troublesome and costly."

Railway Purchases and General Business

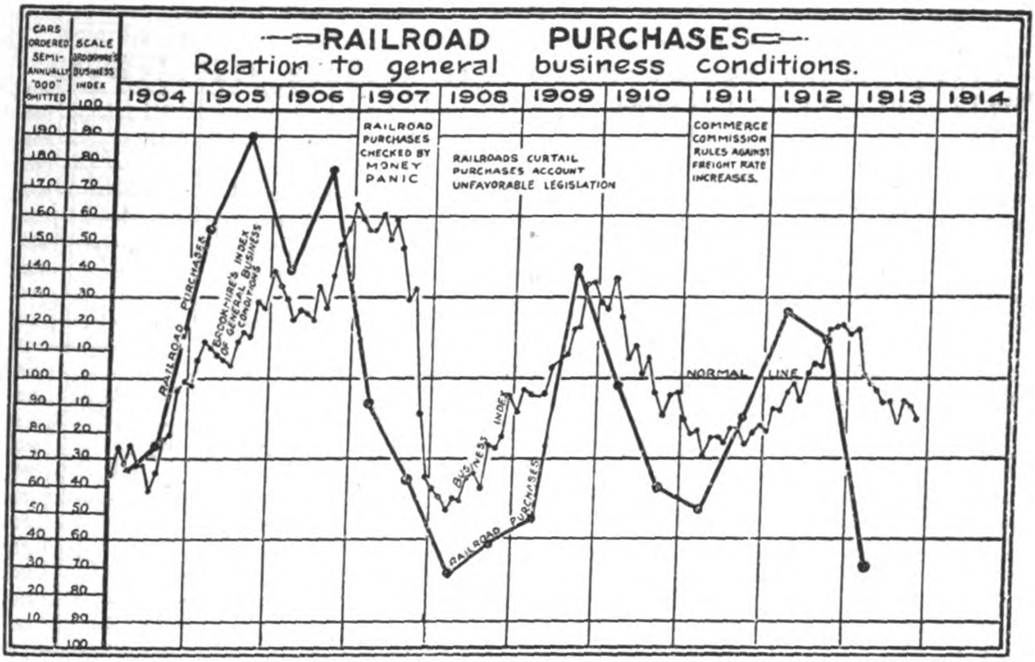


Chart prepared by E. B. Leigh, President, Chicago Railway Equipment Co., from Statistics of Car Orders and the Index to General Business Conditions issued by Brookmire, the St. Louis statistician, to show how closely revivals follow resumption of railway purchases, and recessions follow decline in railway purchases.

Railway Revenues and Expenses for October.

THE Bureau of Railway Economics at Washington, has issued a summary of the revenues and expenses of steam roads of the United States for the month of October, 1913. These returns reduced to a per mile of line basis, and compared with the returns for October, 1912, show a decrease in total operating revenues per mile, of 1.3 per cent, and an increase in operating expenses per mile of 5.3 per cent. Net operating revenue per mile, was less by $60 or 12.4 per cent, than for October, 1912, while that for October, 1912, was 14.4 per cent greater than for October, 1911.

The railways whose returns are included in this summary operate 224,537 miles of line or about ninety per cent of the steam railway mileage in the United States. The operating revenues for the month of October, 1913, amounted to $290,605,915. This includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with October, 1912, the total operating revenues show a decrease of $1,516,225. The total operating revenues per mile of line averaged $1,294 in October, 1913, and $1,311 in October, 1912, a decrease of $17, or 1.3 per cent. Freight revenue per mile decreased 2.5 per cent while passenger revenue per mile increased 1.2 per cent.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $195,338,456. This was $11,158,090 more than for October, 1912. These operating expenses per mile of line averaged $870 in October, 1913 and $827 in October, 1912, an increase of $43 per mile, or 5.3 per cent.

Net operating revenue, that is, total operating revenue less operating expenses, amounted to $95,267,459. This was $12,674,315 less than for October, 1912. Net operating revenue per mile of line averaged $424 in October, 1913 and $484 in October, 1912, a decrease of $60 per mile, or 12.4 per cent.

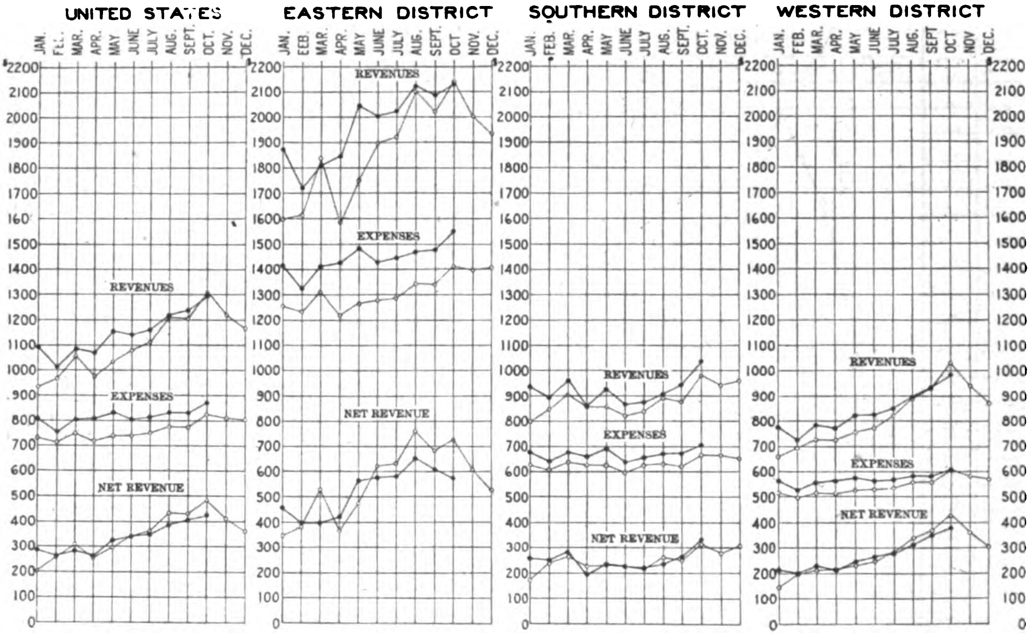
Taxes for the month of October amounted to $11,494,344, or $51 per mile, an increase of 11.7 per cent over October, 1912.

Operating income, which is net revenue from rail and outside operations, less taxes, averaged $373 per mile of line, and in October, 1912, $441, thus decreasing $68, or 15.4 per cent. Operating income for each mile of line for each day in October averaged $12.04 and for October, 1912, $14.23. Operating income is that proportion of their receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

The operating ratio for October, that is, the per cent of total operating revenues absorbed in operating expenses, was 67.2 per cent, which is comparable with 67.3 per cent in September, 1913, and 63.0 per cent in October, 1912.

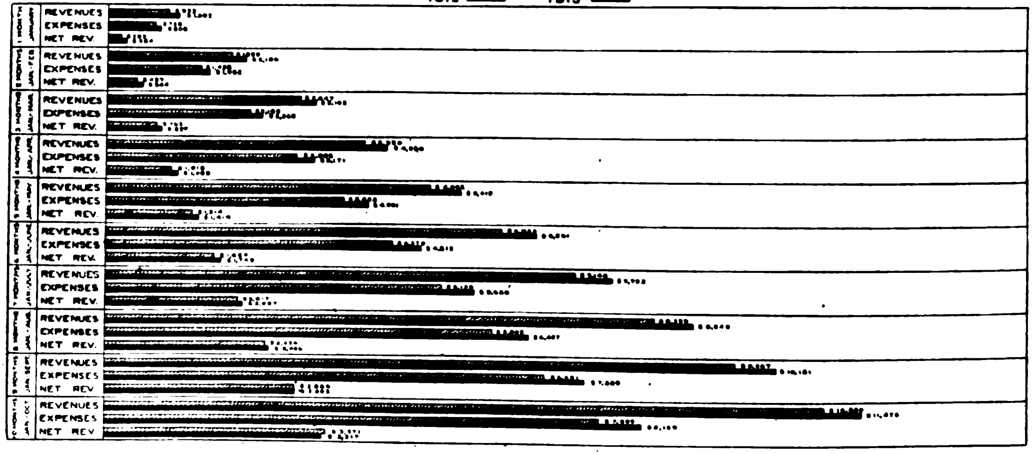
MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES OF $1,000,000 OR OVER
CALENDAR YEAR
1912 •
1913 •



The points on the vertical lines are alone of significance in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

DIAGRAM COMPARING FOR THE INDICATED PERIODS OF THE CALENDAR YEARS 1912 AND 1913
CUMULATIVE REVENUES, EXPENSES AND NET REVENUE PER MILE OF LINE
ROADS HAVING ANNUAL OPERATING REVENUES OF $1,000,000 OR OVER
1912 ▬ 1913 ▬



A Business Condition Map.

THROUGH the courtesy of the Secretary of the Chamber of Commerce of the United States, we are able to print herewith, the first map prepared by the Committee on Statistics and Standards of the National Chamber, indicating the business conditions in the United States during the closing weeks of 1913. Maps of this character, accompanied by a general condition report covering the entire country, will, in the future, be a part of the regular service rendered by the National Chamber of Commerce to its members; and, it is hardly necessary to state, will be greatly appreciated by all those interested or concerned in the country's industrial and commercial progress. As the map indicates, business conditions throughout the United States at the close of 1913, were generally fair, the regions from which poor business was reported, being largely offset by areas from which reports were received of good business. The map is of particular interest as indicating the areas affected by crop conditions and the iron and steel industry.

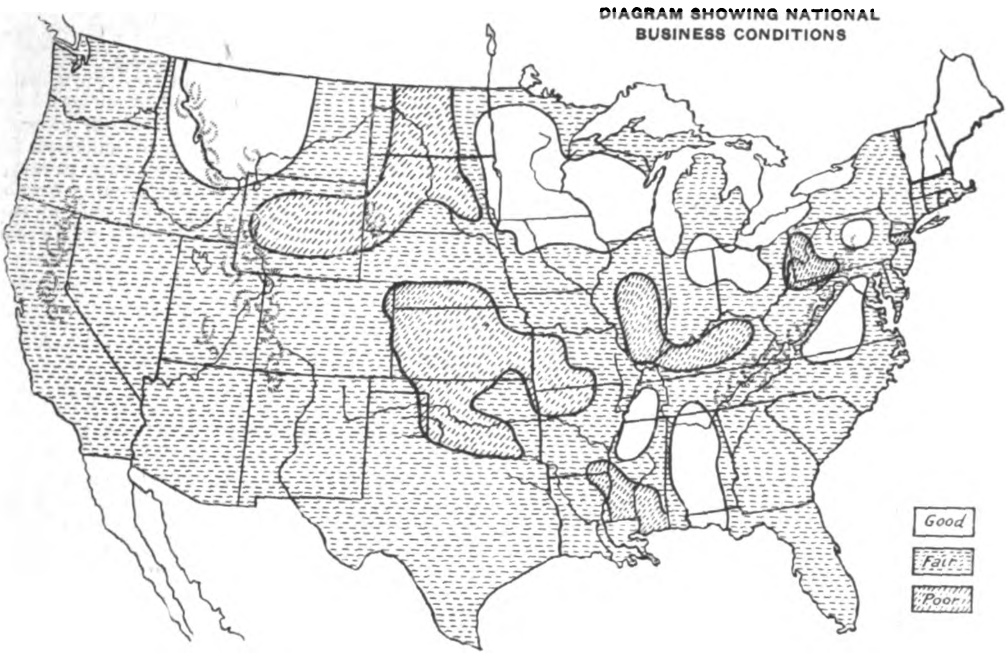
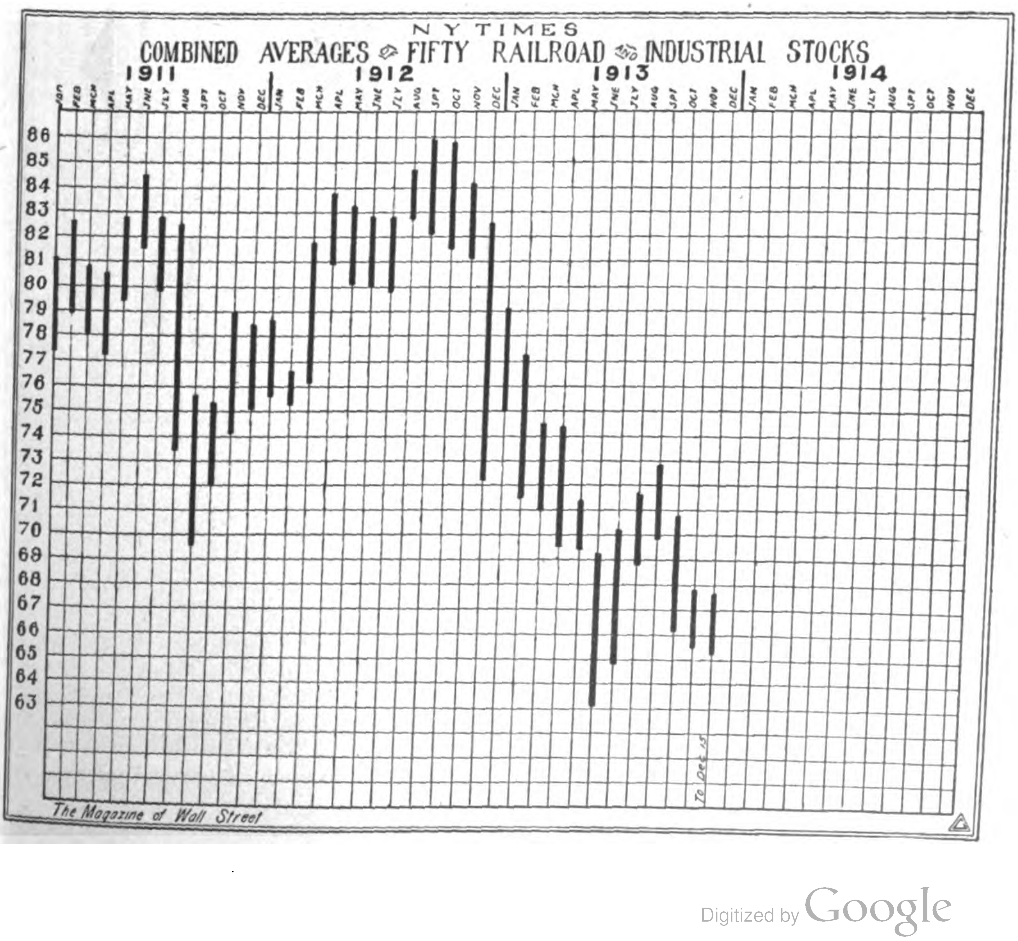


DIAGRAM SHOWING NATIONAL BUSINESS CONDITIONS

Trend of Stock Prices.

THE following diagram prepared by the *Magazine of Wall Street,* shows the trend of stock prices during the past three calendar years. The statement for December, 1913, is incomplete, showing only the first fifteen days, but indicates very little variation from the November averages. So far during January, there has been a distinct upward trend in a number of important issues, so that this month is likely to develop more favorable results.



N Y TIMES
COMBINED AVERAGES & FIFTY RAILROAD AND INDUSTRIAL STOCKS

Remarkable Record of Virginian Railway.

THE report of the Virginian Railway to the Interstate Commerce Commission for November, discloses the fact that the railway broke the world's record for hauling freight over land at low cost.

The report shows that the road was operated for 47 per cent of the gross intake, made 56 cents every time it received $1, and hauled a ton of freight three miles for a trifle less than one penny, United States money.

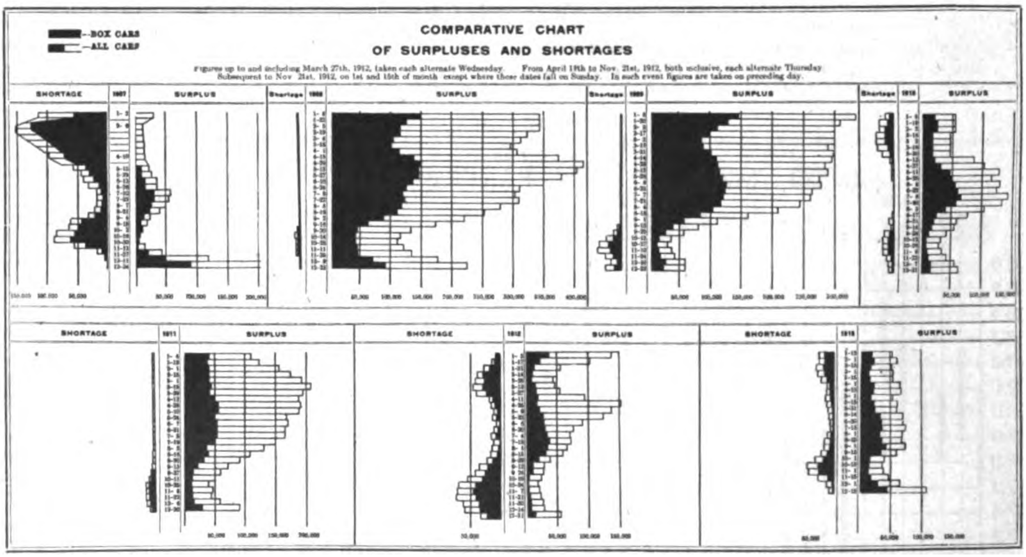
Raymond Du Puy, vice-president and general manager of the road, in commenting on the general results obtained for November, said:

"We had our best month, so far. We operated for a fraction under 47 per cent of our gross, and it was not done at the expense of the property. Last year we spent for upkeep of equipment $4,137 on each locomotive; $735 on each passenger coach, about $46 on each freight car. We also spent $1,508 for maintaining each mile of road and this year we are even increasing maintenance charges."

Operation

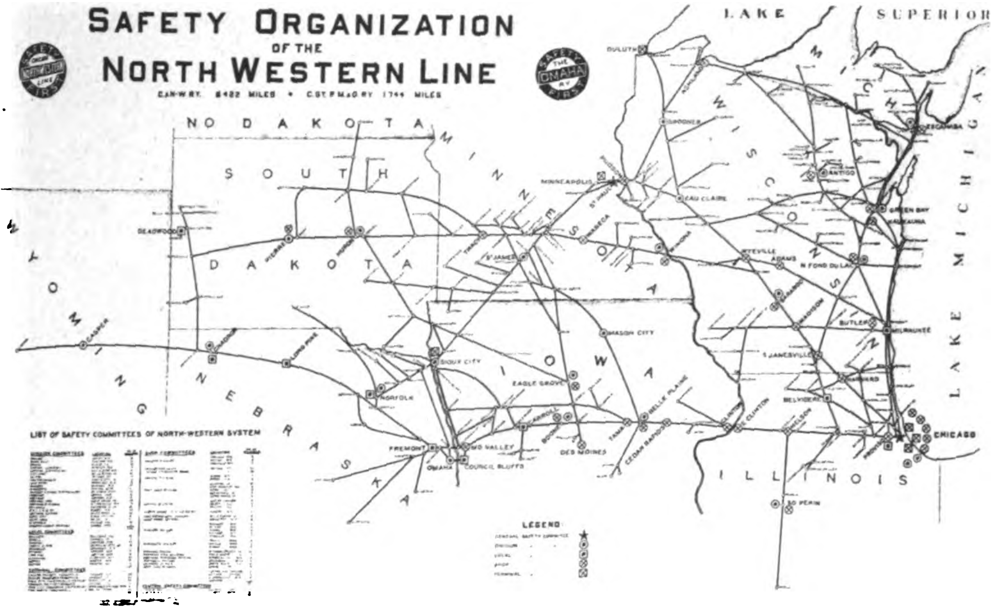
The Car Situation on December 15th.

THE Committee on Relations between railroads of the American Railway Association, reports that on December 15th, 1913, there was a total surplus of 107,513 cars compared with 67,466 on December 1st of the same year, and 26,614 on December 14, 1912. The same report shows that shortages on December 15, 1913, numbered 5,968 cars, while on December 1, 1913, they were 10,212 and on December 14, 1912, 61,006 cars. These figures indicate a net surplus on December 15, 1913, of over 100,000 cars against a net shortage on December 14, 1912, of more than 34,000 cars, strikingly indicating the difference in the car demand as between these two dates.



Northwestern Safety Organization.

AN interesting map is herewith presented showing the safety organization as it has been developed on the Chicago Northwestern Railway. At the present time there are 972 members belonging to this organization, of which nineteen belong to the two Central Safety Committees, one at Chicago with eleven members and the other at St. Paul with eight members. The balance of the membership is divided up as follows: Division committees 452; local committees 140; terminal committees 130 and shop committees 231. On the map stars indicate the location of the central safety committees, circles with dark centers the location of division safety committees, squares with dark centers the location of local safety committees, circles with crosses the location of shop safety committees and squares with crosses the location of terminal safety committees.


SAFETY ORGANIZATION OF THE NORTH WESTERN LINE
C.&N.W.RY. 8422 MILES • C.ST.P.M.&O.RY 1744 MILES
SAFETY FIRST
THE OMAHA RY
NO DAKOTA
SOUTH DAKOTA
MINNESOTA
WISCONSIN
MICHIGAN
IOWA
NEBRASKA
WYOMING
ILLINOIS
LAKE SUPERIOR
LAKE MICHIGAN
DULUTH
MINNEAPOLIS
SIOUX CITY
EAGLE GROVE
MASON CITY
NORFOLK
FREMONT
OMAHA
COUNCIL BLUFFS
DES MOINES
CEDAR RAPIDS
BELLE PLAINE
CLINTON
EAU CLAIRE
GREEN BAY
ESCANABA
BUTLER
MILWAUKEE
JANESVILLE
BELVIDERE
CHICAGO
DEADWOOD
CASPER
LIST OF SAFETY COMMITTEES OF NORTH-WESTERN SYSTEM
LEGEND

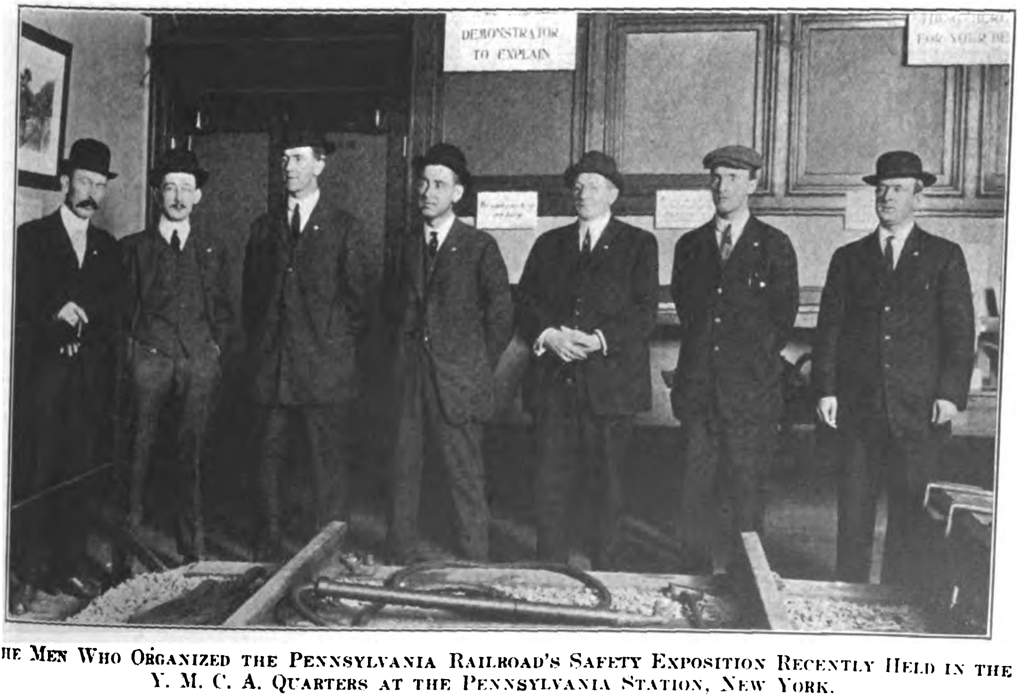
Safety Record on the Pennsylvania.

Reports to the general office of the Pennsylvania Railroad indicate that not a single passenger out of 111,000,000 carried by the Pennsylvania Railroad Company in 1913 was killed in a train accident.

Reports for the past six years show that almost 600,000,000 passengers—more than one-third of the whole world's population—have been carried by the Pennsylvania Railroad, and but sixteen of them lost their lives in accidents to trains; nine were killed in one accident. In six years, out of approximately 5,000,000 trains operated—about 1,370 a day—only five have suffered wrecks which caused the death of any of the passengers carried on them. Three of these years were entirely free from train accidents causing the death of passengers.

The Pennsylvania Management regards every accident of any kind on its property as one too many. Every effort is being continually directed to the end that the number of accidents of all kinds may be steadily reduced, and if possible, prevented.

The safety first campaign on the Pennsylvania

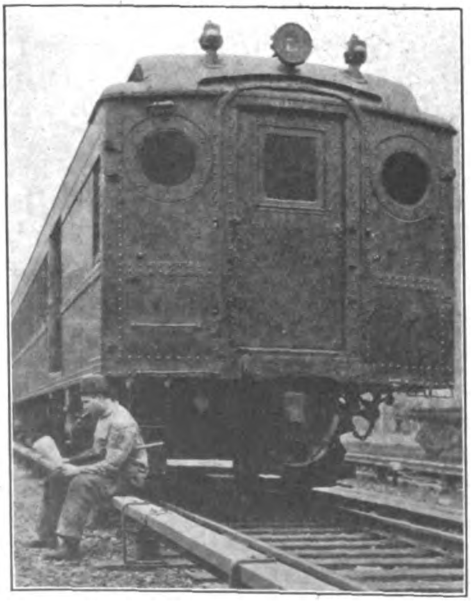

DEMONSTRATOR TO EXPLAIN

The Men Who Organized the Pennsylvania Railroad's Safety Exposition Recently Held in the Y. M. C. A. Quarters at the Pennsylvania Station, New York.

One of the Three Rooms in the Y. M. C. A. in the Pennsylvania Station, New York, in Which Duplex Exhibits Showed the Right and the Wrong Way of Doing Things Involving Possible Danger.

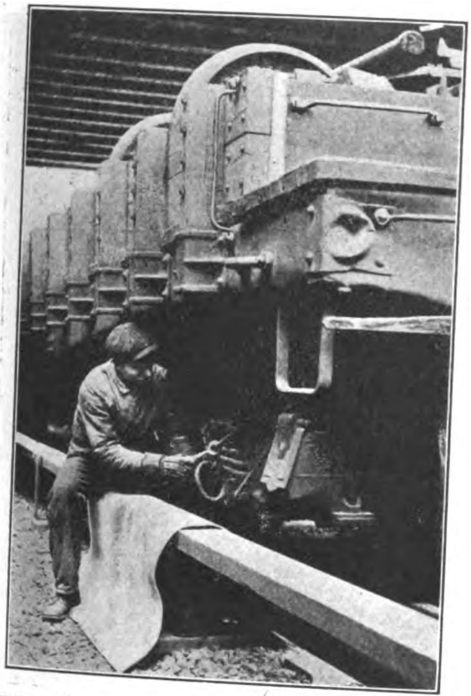
Railroad system has been for some time highly organized, but efforts along these lines have been redoubled in recent years. During the past four years this railroad has had thirty-five committees of employes on its lines East of Pittsburgh, investigating, recommending and warning, and has already spent nearly $500,000 in following these special recommendations in small matters, altogether aside from larger expenditures in signals, steel cars and other more obvious safety appliances. Since 1910, the various safety committees have made 17,333 recommendations, 13,861 of which have been adopted. One result of which is that exactly 99,753 safety guards of all kinds have been installed. Another, and more significant result, is that thirty-five out of forty-six shops where more than 500 men are employed, the number of serious accidents per one thousand men, has been reduced by from five per cent, in some cases to seventy per cent in others. Where one Pennsylvania Railroad employe was interested in the safety movement four years ago, there are hundreds to-day, and up to date, some 120,000 safety buttons have been distributed.

An interesting feature of this work has been a "safety first" exposition recently held in the



Illustrating Employe Who Should be Flagging His Train, Sitting on Third Rail.

This Repairman Does Not Take Time to Protect Himself From the Third Rail.



Rubber Blankets Should be Employed When Working Over Third Rail, Thus Guarding Body or Tools From Coming in Contact Therewith.

This Employe Invites an Explosion by Lighting a Cigarette While Sitting on a Can of Gasoline.

Y. M. C. A. quarters of the Pennsylvania Station at New York. This remained open for a week and was visited by about 4,000 persons, mostly employes. The accompanying photographs show some of the devices and methods employed at this exposition to emphasize various phases of the greater safety work.

In brief, the Pennsylvania Railroad is making a concerted effort to develop the operation of the road to the highest possible standard of efficiency and safety, and to this end all departments are co-operating.

Baltimore and Ohio's Improved Safety Results.

In a review of the statistics of accidents of all classes occurring on the Baltimore and Ohio—Cincinnati, Hamilton and Dayton system during 1913, the General Safety Committee has issued a bulletin setting forth that there has been a decrease of twenty-six in the number of fatal accidents, or twenty per cent. During the same period there was a substantial increase in the train mileage, occasioned by the increased business handled.

"This must be very gratifying to the employes," reads the bulletin, "and should prove a great incentive to their doing still better during the coming year."

The records of the signal department of the Baltimore and Ohio Railroad show that about $1,000,000 has been expended in this character of improvements during 1913. This money has been used in installing block signals of the latest design for the protection of the traveling public and as a safe-guard in the movement of traffic until now the main lines of the company are protected entirely by improved signalling systems. The expenditures during the past year for this class of betterment work brings the total cost of the signal systems in use on the Baltimore and Ohio lines up to about $5,000,000.

The Baltimore and Ohio has also announced that it will begin the new year by starting an unusually extensive and systematic campaign against accidents and their causes. This includes the reorganization of the General Safety Committee which will in the future be composed of seven members including the chairman, and an official from the transportation, motive power, maintenance of way, stations and traffic, and the relief departments, together with a former inspector of the Interstate Commerce Commission, all of whom will be relieved of other duties and will devote their entire time to studying the question of safety operation. There will also be an advisory committee acting in conjunction with the General Safety Committee.

The General Safety Committee is J. G. Pangborn, chairman; E. R. Scoville, for several years a division superintendent, representing the transportation department; John Hair, formerly superintendent of motive power, representing the mechanical branch of the service; W. McC. Bond, formerly division engineer, representing the maintenance of way department; J. T. Campbell, of several years' experience as an agent, representing the stations and traffic department; Dr. E. M. Partlett, representing the relief department and matters of sanitation, and B. C. Craig, who for the past nine years has been an inspector of railway safety appliances in the employ of the government.

The Advisory Committee consists of A. Hunter Boyd, Jr., of the law department of the company, and chairman of the Baltimore and Ohio General Safety Committee when the work was inaugurated nearly three years ago; J. W. Coon, of the operating department, also for a year or more chairman of the "Safety First" movement,

BALTIMORE & OHIO RAILROAD

BALTIMORE AND OHIO'S RECENT SAFETY EXHIBIT AT NEW YORK CITY.

and Dr. J. F. Tearney, of the relief department and formerly member of the General Committee.

One day each month will be designated as Safety Day on each division, when the members of the General Safety Committee will confer with local committeemen, make an inspection of terminals, yards, shops, stations, freight houses and other railroad property. It is expected that the General Safety Committee will spend a large part of the time on the road during the next several months, putting in a complete organization and becoming familiar with conditions on all parts of the system.

The accompanying photograph gives an interesting glimpse of the Baltimore and Ohio's "Safety First" installation at the International Safety and Sanitation Exposition of that Company at the Grand Central Palace, New York, in December. The exhibit of the Baltimore and Ohio occupied 400 sq. ft. of floor space and included full size models, working reproductions and photographs of equipment fitted up with the latest safety appliances. The exhibit also calls attention to the plans which have been carried out in the shops, on the tracks and in other branches of the service in an effort to prevent accidents. An interesting feature of the exhibit, as indicated in the photograph, is a "Safety First" clock, shown in the foreground of the picture and built and used by the men in the Mount Clare shops in Baltimore. As the clock strikes the hour and half hour, an automatic signal surmounting it goes to the danger position, a locomotive whistle blows to indicate that the signal has been observed by the engineer, and a set of safety rules are displayed.

The Results of Excessive Speed.

THE chief inspector of safety appliances of the Interstate Commerce Commission, has issued a report covering an investigation of the derailment of a passenger train on the Mobile and Ohio Railway, near Buckatonna, Miss., which occurred on October 19, 1913, and which resulted in the death of seventeen passengers and the injury of one hundred and thirty-nine passengers and six employes.

After an exhaustive investigation, the chief inspector has arrived at the conclusion that the accident was due to excessive speed in rounding a curve, which caused the derailment of the forward wheels on the tender and which, in pounding the ties of a bridge reached almost immediately after the derailment, caused them to be bunched and broken and so weakened the structure that it collapsed under the weight of the cars, throwing them to the bed of the creek.

The investigation disclosed that the bridge was built in a substantial manner and under ordinary circumstances, would not have collapsed under the train. Track and road bed were also found to be in excellent condition, so that the derailment, so far as the investigation could determine, must have been caused by excessive speed which the report estimates at about fifty-five miles an hour, although the engineer was of the opinion that he was traveling at a rate of only about thirty-five miles per hour. The following illustration gives an excellent idea of the havoc wrought. The investigation also disclosed that the engineman was practically inexperienced in passenger train operation work, it being the second time he had ever run a train of this character.

The report calls special attention to the extent that excessive speed has been a contributing factor to many derailments. In this particular the following table, which shows the derailments investigated since July 1, 1911, in which the speed of the train was either the primary cause or the contributing cause of the accident, will prove of interest to railway officials:

Railroad.	Date	No. killed.	No. injured.	Cause.
Oregon Trunk	July 10, 1911	5	35	Excessive speed on curve; engineman did not observe slow order.
Lake Erie & Pittsburgh	Sept. 13, 1911	4	16	Backing up over new track at excessive speed.
New York Central & Hudson River ..	Mar. 13, 1912	..	48	Spread rails on curve due to track structure failing to support heavy train at high speed.
New Orleans & North Eastern	May 6, 1912	9	58	Soft and uneven roadbed and excessive speed in view of this condition.
Chicago & Alton	June 8, 1912	..	24	Track unsafe for speed permitted; low spot.
Nashville, Chattanooga & St. Louis ..	June 12, 1912	3	75	Excessive speed on curve.
Illinois Central	do	..	9	Excessive speed over bad track.
Southern	July 17, 1912	1	52	Excessive speed on curve.
Chicago, Milwaukee & Puget Sound ..	Aug. 12, 1912	5	10	Do.
Cincinnati, Hamilton & Dayton	Aug. 25, 1912	1	25	Track unsafe for speed permitted.
Southern	Sept. 5, 1912	1	25	Excessive speed on curve; low spot.
New York, Chicago & St. Louis	Sept. 10, 1912	..	29	Excessive speed in view of existing track conditions; track being repaired.
Louisville & Nashville	Oct. 12, 1912	2	38	Excessive speed on curve.
Norfolk & Western	Oct. 20, 1912	1	13	Do.
Houston & Texas Central	Feb. 1, 1913	2	9	Defective engine equipment; excessive speed in view of existing track conditions.
Northern Pacific	May 12, 1913	4	7	Excessive speed in view of existing track conditions; track being repaired; spread rails.

In discussing this table the report states:

"Of the sixteen derailments shown, seven occurred on straight track and nine occurred on curves. With three exceptions all of the trains involved were being operated either within the speed limits allowed at the point of derailment or under no restriction whatever. These cases were the first, thirteenth, and fourteenth accidents shown in this table, and the speed limits were ten, forty-five and twenty-five miles per hour, respectively. Had these restrictions been heeded the accidents no doubt would have been averted. In the other thirteen cases, however, there were no speed restrictions whatever in effect, although the investigations of these accidents disclosed the need of such restrictions. As stated in a previous report, a study of the conditions surrounding several of the derailments investigated 'emphasizes the fact that in many places and on many roads in this country track is not properly constructed or sufficiently well maintained to provide for the safe operation of trains at high speed. It is believed that means should be taken to ascertain the limit of speed at which trains can be safely operated and to

Wreck on Mobile and Ohio, Showing Derailed Cars and Manner in Which Ties on End of Bridge Were Broken.

provide an adequate margin between this limit of safety and the highest speed permitted or attained.'

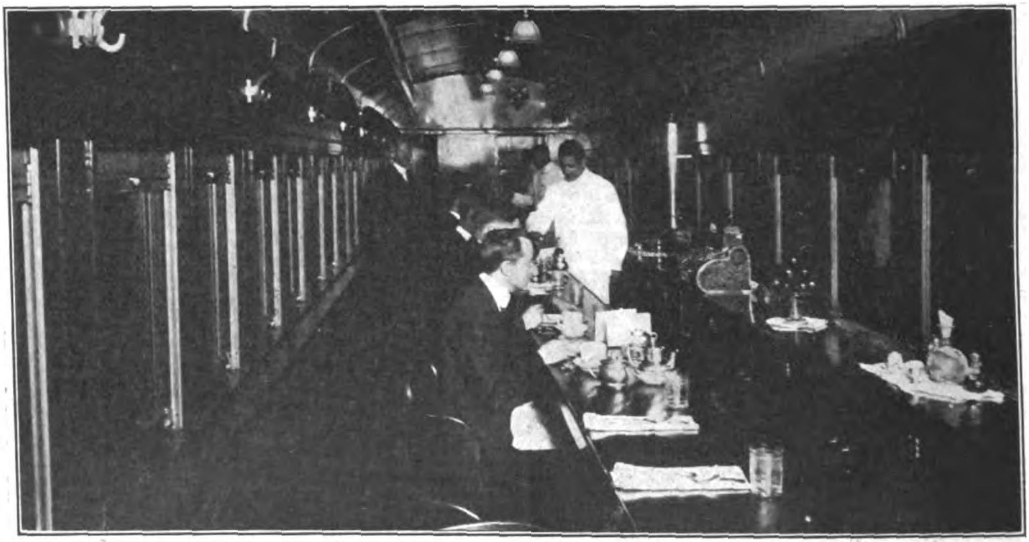
"Eleven of the derailments shown were what are known as tender derailments, the forward tender wheels usually being the first to leave the rails. Derailments of this kind form one of the most perplexing problems with which operating and mechanical officers have to contend. They result from a number of causes, and often occur under such circumstances that the real cause is never definitely determined. On account of its comparatively short wheel base and high center of gravity, as well as the movement of water in the cistern, surging back and forth and from side to side, the tender is subjected to forces with which it is particularly difficult to deal and which are aggravated by any irregularity which may exist in the track. Derailments of this kind occur more or less frequently on every large railroad in this country. Such derailments should be given the closest possible study with the view of definitely ascertaining their causes and of eliminating them as far as practicable."

Experimenting With Lunch Counter Cars.

THE Pennsylvania Railroad recently completed a new solid steel lunch counter car, and on December 1st, placed it in service between New York and Philadelphia, on trains which also carry ordinary dining cars. While the novelty of the counter car may for a while prevent a fair comparison in the patronage of the two kinds of cars, it is planned to continue the experiment for a sufficient period to determine just what is more popular with the traveling public. The object in building the counter car was to see if it would permit of serving meals to passengers quicker—and thus serve satisfactorily more patrons—than is possible in a dining car.

The new car is eighty feet long, and the exterior appearance is the same as that of a Pennsylvania all-steel passenger coach. The interior is radically different from the ordinary dining car. Instead of tables there is one long mahogany counter extending over half the length of the car; facing this counter on one side are revolving mahogany chairs, secured to the floor. The counter is long enough for twenty-one people to be seated at one time. Back of the counter against the wall there are twenty cupboards for supplies, in addition to receptacles for crushed ice, drinking water, ice cream, milk and cream. Shelves for linen and silver occupy the space under the counter. Sunk in the counter at the end away from the kitchen is a cigar humidor. At one end of the car there is a wash basin for the use of passengers.

The pantry and kitchen are at one end of the counter. The pantry contains dish racks, cupboard, a sink and a locker. Food will be passed from the kitchen into the pantry through openings which can be closed by sliding doors. As these openings are just above the serving table in the pantry, there is no necessity for waiters to go into the kitchen. The kitchen itself is about eleven feet long; it contains a range, broilers, steam table, ice box, coffee urn, soup receptacle and meat warmer.



THE NEW LUNCH COUNTER CAR OF THE PENNSYLVANIA RAILROAD.

The interior of the car is finished in a mahogany color, the same as the dining cars. It is electrically lighted, and ventilation is aided by an exhaust fan and three large electric fans.

The car has been put in service on a train leaving Philadelphia for New York at twelve o'clock noon, as this train is usually heavily loaded, and a large number of the passengers, as a rule, eat their lunch on the train. The second trip of the car is on the train leaving New York the same afternoon at six o'clock.

Educating Railway Men in England

FROM OUR LONDON CORRESPONDENT.

BRITISH railways continue to pay more and more attention to the technical training of their staffs. Company after company has installed new educational and training departments where the newest ideas in railway management and control can be demonstrated and efficiency made manifest. By the courtesy of Mr. George H. Dennis, of the London, Brighton and South Coast Railway, we are enabled to give some interesting details of a new department so far as that important south of England railway is concerned. On November 3, officials of the company opened at Croydon, in the South of London, a school for instruction in railway outdoor work and signaling.

The necessity for, and possibilities of such a school had for some time been recognized by the Superintendent of the line, Mr. Finlay Scott, and about a year ago, he approached the General Manager, Mr. William Forbes, on the matter. This gentleman at once took a keen interest in it and obtained the sanction of the directors to building and equipping the school, together with the cost of upkeep and a grant for prizes, etc. The work was at once taken in hand by the company's engineer, Mr. Morgan, and an excellent room measuring 52 feet by 28 feet has been built adjoining the district engineer's office at East Croydon.

The equipment of the school has been very complete, comprising a model railway and junction 47 feet long, which includes main and branch lines, refuge siding and a crossover road. This model railway is fully signaled and provided with facing point locks and bars, fouling bars, discs, detectors, etc., practically the same as would be done at any similar junction on the Brighton Railway. The whole of the signals and connections of this model railway are worked from a 24-lever frame, properly interlocked as in the case of an ordinary signal box.

Two model trains are provided to work on this railway, one a passenger and the other a goods, all vehicles and engines being painted to the London, Brighton and South Coast colors and designs.

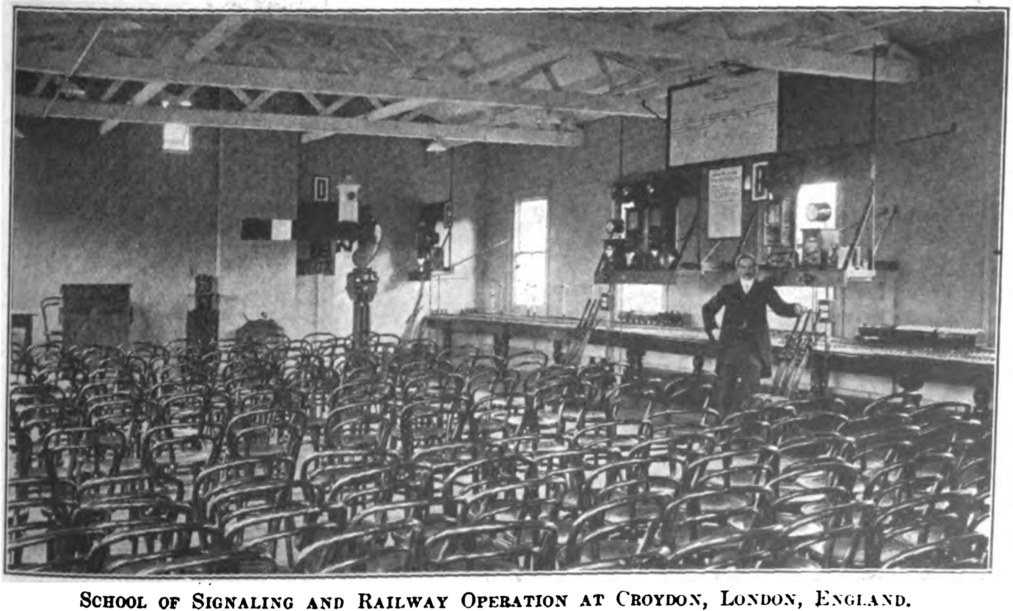
To work with this model there is a complete set of Tyer's Train Signaling instruments, which are mostly in use in the southern district of the line, properly connected as between four boxes, known respectively as A, B, C and D. In addition to this a set of the more up-to-date Sykes Lock and Block Train Signaling instruments are provided and connected as between three boxes, viz.: A, B and C, with eight nearly full size levers to work with them. Two switches, one for Tyer's and the other for Sykes enable the center box B to be switched out.

There are also two single line electric train staff pillars with staffs, electrically connected, also a train staff and ticket box for instruction in the working of single lines.

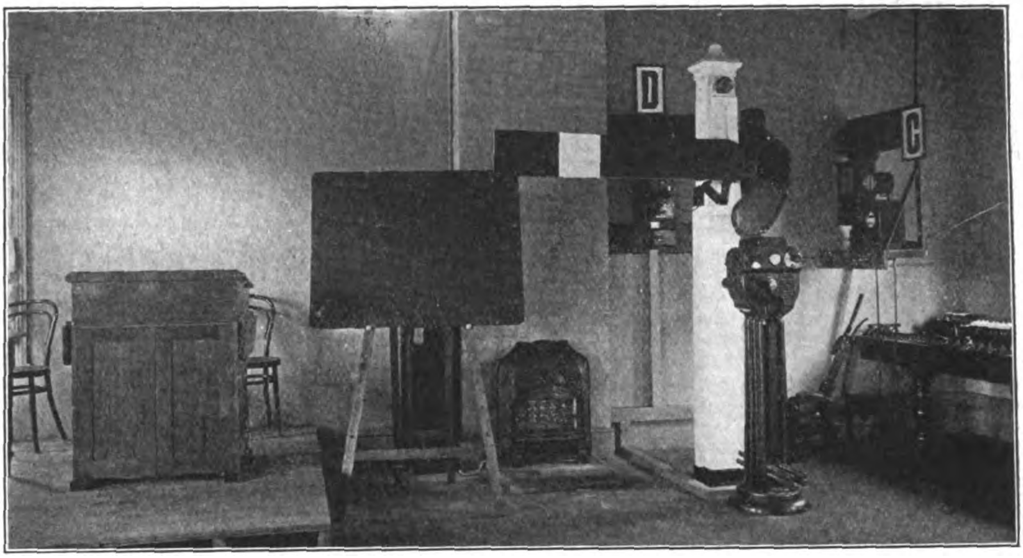
Two pairs of single needle telegraph instruments are fixed, two at either end of the room and connected in pairs, for telegraph practice.

Other equipment of the school consists of a full size home signal post and arm, with lamp, etc., and a signal repeater working with it; also models of a Clayton fog signaling machine and placer. A main lock up switch is provided to enable the current to be cut off from all instruments except the telegraph instruments, thus putting them out of action when not required.

The object of the school is to give everyone who so desires an opportunity of acquiring a knowledge of signaling and outdoor railway working and to avoid the necessity of men going into signal boxes for that purpose, which hitherto has been practically the only means available. The school is open on Monday nights from 8 to 9 o'clock for lectures, and on Friday nights between



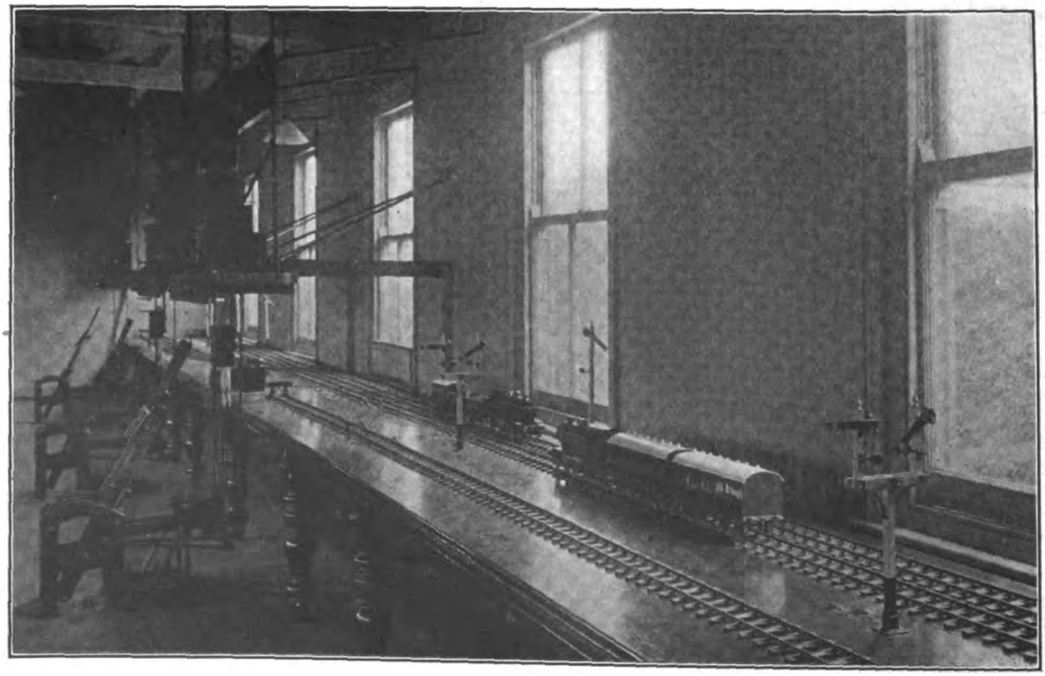
SCHOOL OF SIGNALING AND RAILWAY OPERATION AT CROYDON, LONDON, ENGLAND.



Instructor's Desk and Various Signal Appliances in the Croydon School of Signaling and Railway Operation.

the same hours for telegraph practice. The following are some of the subjects which will be dealt with during the session, which will probably last until April next:

1. The working of fixed signals, facing points, trailing points, catch points, level crossings, gates, etc.
2. Double and single line block working.
3. Sykes' Lock and Block.
4. Working of single lines by train staff and ticket, and by electric train staff.
5. Equipment of trains (head lights, tail lights, guards' equipment, etc.).
6. Working of Westinghouse brake.
7. Slipping regulations.
8. Emergency working of double lines as single lines.
9. Protection of trains, wrong line working, etc.
10. Working during fogs or snowstorms.
11. Working of lines when signals or locking gear are out of order.



The Track and Signal Layout in the Croydon School of Signaling and Railway Operation.

12. Precautions taken by engineer's department when repairing road, etc.

13. Hand signaling.

Mr. W. E. Reynolds, of the superintendent of the line's office, who has dealt with the arrangements and equipment of the school throughout, has been appointed lecturer and will conduct the classes on behalf of the superintendent of the line, under whose supervision the school is placed. Judging by the enthusiasm displayed on the opening night, it is evident that the school is fulfilling a long felt want, and will without doubt do good service.

Safety on the Southern Pacific.

IN competition with all steam railways of the United States the Southern Pacific Company has been awarded the Harriman Memorial Safety Medal founded by Mrs. Mary Averill Harriman, widow of the late railroad builder, for the best record in accident prevention and hygiene affecting the public and its personnel during the current year, 1913. The award was made by the American Museum of Safety, under the auspices of which the competition was conducted.

The record of the Southern Pacific's achievements and efforts involving safety, industrial, hygiene and other correlative conditions during the year was submitted by R. J. Clancy, assistant to the general manager. It showed that during the fiscal year 1913 on the Pacific system of the railroad, 1,373,815,327 passengers were carried a distance of one mile without the loss of a single passenger from train accident, continuing the Pacific System's record for safety in continuity from the year 1908, involving the movement of 8,000,000,000 revenue passengers a distance of one mile without one passenger fatality as a result of train accident.

The report showed the efforts made by the company in connection with its "Safety First" campaign to reduce the hazard of accidents to the public and its employes. These included the investigation into the primary causes of grade crossing accidents; the company's record as a pioneer in the use of steel passenger cars and construction of steel passenger cars; the installation of safety devices in the shops, such as shields for emery wheels and belting; the adoption of pulmotors for use in first aid to the injured; the adoption of pulmotors for use in injured; its hospital service features; the extreme sanitary measures taken in the care of its passenger cars, the icing of water tanks, etc.; the requirement of extreme sanitary measures on the part of its employes; the institution of surprise tests to promote and check efficiency and discipline; the encouragement of safety committees among employes and innumerable other pertinent items to secure the safety of life and limb. The award of the medal names the Southern Pacific the safest railroad on which to travel in the United States and it redounds in two ways to the memory of Mr. Harriman, viz.: the medal as a memorial, in itself, and the award to the railroad of which Mr. Harriman was for so long the head.

Northwestern Dining Car Service Inaugurates New Sanitary Feature.

THE Chicago and Northwestern Railway has established a new policy in its Dining Car Department, which will increase sanitation to the highest possible standard.

The new plan, provides that all dining car conductors, cooks, waiters, private, parlor, buffet and chair car porters as well as all employes of the Commissary Department must undergo a physical examination on or before May 1st and November 1st of each year, to insure their fitness for the class of work assigned to them.

The examinations are conducted by physicians in the employ of the Chicago and Northwestern Railway, who report results direct to the Superintendent of the Dining Car Department.

President Willard's New Year's Greetings to Employes.

IN accordance with his annual custom, President Willard of the Baltimore and Ohio, sent the following telegram early on the morning of January 1st, to all employes of the Baltimore and Ohio Railroad:

"Once more I wish to extend to all employes of the Baltimore and Ohio system my best wishes for a happy and prosperous New Year and at the same time I wish to assure all of my appreciation of their loyal service and support during the year just ended.

"The year of 1913 has been one of unusual difficulties for the Baltimore and Ohio Railroad Company. Never in its entire history has it met with such great disaster as was occasioned by the unprecedented floods of last March. However, except for a few bridges, which have not yet been permanently rebuilt, the damage caused by the high water has all been repaired, but the making of the necessary repairs, together with the loss of business during the interruption, has imposed an excessive and most unusual burden upon the company during the last nine months.

"It is to be regretted that the smaller volume of business to be handled at the present time has made it necessary to reduce the force and curtail expenses as much as possible in all directions. It is hoped that conditions will soon mend to such an extent that the business of this company may again be on the basis of one year ago and the forces be fully restored. While under existing conditions the most rigorous economy is necessary, it should be clearly understood that nothing is to be done which will in the slightest degree adversely affect the safety of operation, and in that connection I wish again to urge the request contained in my message one year ago to-day, that all keep constantly in mind during the year just begun the importance of "safety first." "Safety first" means not only safety for the traveling public and our patrons generally, but also safety for each individual employe. Much has been done in that direction, I am glad to say, during the past year, and I hope we may have the hearty and active co-operation of all during the year just begun."

Daniel Willard.

Mechanical

Wireless Telegraphy in Railway Service.

THE Delaware, Lackawanna and Western Railway has recently been conducting some interesting and successful experiments with wireless telegraphy on moving trains operating between stations 65 miles apart. Heretofore, it has been thought necessary that to successfully employ the wireless system, all receiving and transmitting stations must be equipped with antennae or aerials supported on high towers. This system of course would prove impractical on a moving train, inasmuch as the passing through tunnels and under bridges would not permit the ordinary aerial to be employed. The Lackawanna road, however, has found that wireless communication can be maintained to and from a train in motion, equipped with a low aerial such as the one indicated in the accompanying illustration, which is only eighteen inches above the roof of the car.

The distance between Scranton and Binghamton, the two stations between which these experiments have been carried on, is about 65 miles, and it has been found possible to maintain communication from a train running at a rate of 55 miles an hour with one or the other of these stations. If the train gets too far distant from one station for its abbreviated aerial to send signals through to that station direct, the train is then sufficiently near to the second station to have its signals picked up by it and from there relayed back. In other words, the train is never out of wireless communication with one or the other stations during its 65 mile trip.

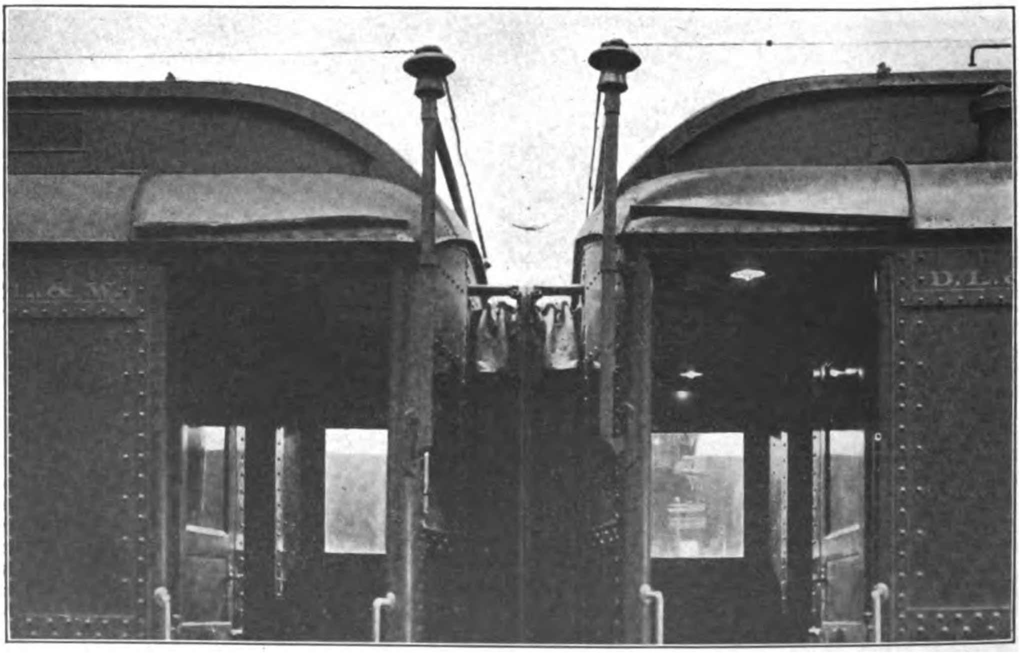
Briefly stated, the train equipment consists of four quadrangular aerials, eighteen inches high, mounted on the roofs of four adjoining cars of the train. A special attaching plug is employed to connect each quadrangle to those on the other cars. The station of the wireless operator is located in a compartment in the third car of the group, thus bringing the lead from his apparatus to the forefold aerial at a point in the middle of the equipment. The power is furnished by a special motor-generator set, driven by the regular train lighting dynamo, and the regular Marconi system is employed. The ground connection is made to the rails by a wire to one of the car trucks. The aerial which is of heavy copper wire, is insulated for high sending voltage by large porcelain insulators mounted on iron posts at the corners of the car.

The conveniences of such a system are of course many and important. It can be employed not only in connection with train operation but also by passengers.

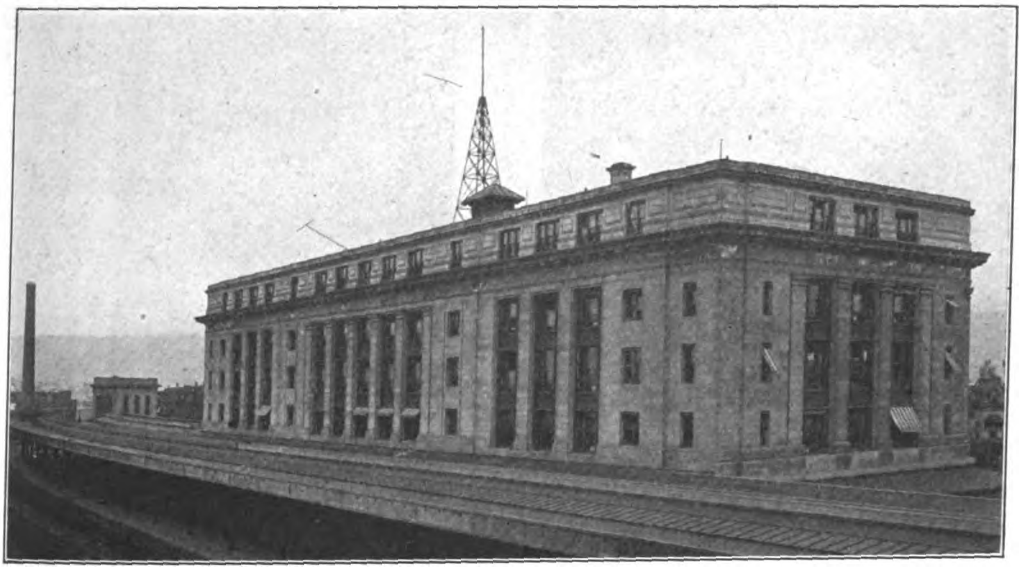
In a recent press interview, Mr. L. B. Foley, the local superintendent of telegraph, had the following to say about the advantages of the new system:

"Signals can be set by wireless as easily and as surely as they are now set by electricity conducted in wires. We have a selective device by which an operator can set a signal at any point if he has occasion to flag a train.

"This means that if any mistakes are made in the orders issued to engineers and conductors at stations or in the case of any emergency in which a train must be stopped to avert an acci-



METHOD OF ATTACHMENT FOR WIRELESS TELEGRAPHY ON EXTERIOR OF PASSENGER CAR EQUIPMENT.



REAR OF THE LACKAWANNA'S SCRANTON PASSENGER STATION WITH WIRELESS ATTACHMENTS.

dent, the station operator can signal the train as certainly as if he had direct wire communication with some one on board.

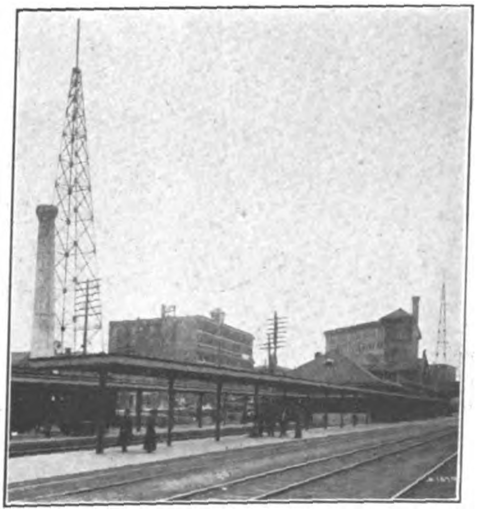
"Another valuable use to which the wireless-controlled signals can be put is the handling of freight trains on long runs. At present a through freight must make many stops between its starting point and destination, so that orders and instructions concerning right of way can be delivered to the conductors, but these frequent stops are a source of expense and delay which will be abolished by the wireless telegraph.

"Keeping freight trains in motion for long distances without stops will result in great economy of operation. Railroad-operating officials know how expensive it is to start and stop heavy freight trains, the additional cost of fuel with the attendant pulling out of drawheads and the wear and tear of equipment being no inconsiderable items in themselves. With direct communication with a train and the ability to set and release signals by wireless, dispatchers can keep in touch with conductors and make the stops needless. The wireless permits the dispatcher to board every train and deliver his instructions as surely as if he handed them to the conductor in a sealed envelope.

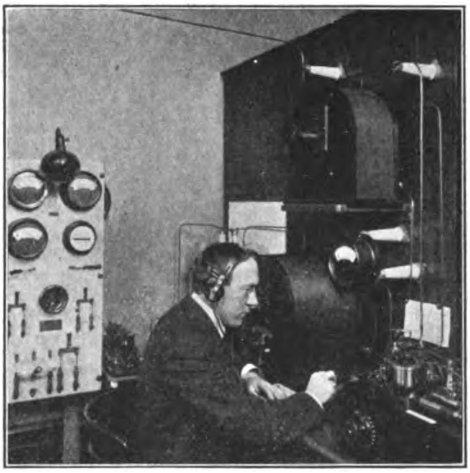
"That the wireless service for ordinary operating purposes is no longer an experiment is proved by the fact that the Lackawanna has already depended upon it when wire communication was cut off. Recently, when a severe sleet storm put all telephone and telegraph lines out of commission in the Mountain Division of the Lackawanna Railroad, all train orders were handled by wireless between Scranton and Binghamton, where the railroad's two fixed stations are. The signals were strong and distinct, and the messages were received and sent by the operators without difficulty. The wireless was the only means of communication between Scranton and Binghamton for two hours, during which fifty-four orders were transmitted."

As soon as all trains are equipped with the wireless the total loss of communication between trains and stations will be a thing of the past, Mr. Foley believes. Such disasters as the Dayton flood and San Francisco earthquake will no longer cause communication between storm-centers and the outside world to be cut off. Messages can be flashed from fixed stations or stalled trains to the nearest station outside the trouble zone. Also derailed or wrecked trains can notify stations of accidents the moment they occur. Commercial telegrams have already been sent from the Lackawanna Limited, and a set of regular toll rates is now being prepared by the railroad and telegraph companies. Moreover:

"The service can be put into operation without increasing the train crews. Regular trainmen can easily learn the telegraph alphabet or telegraph operators on trains can perform the duties



WIRELESS TOWERS AT BINGHAMTON, NEW YORK.



INTERIOR OF LACKAWANNA'S WIRELESS OFFICE AT SCRANTON, PA.

VIEW OF WIRELESS OPERATOR'S COMPARTMENT IN LACKAWANNA'S PASSENGER TRAIN.

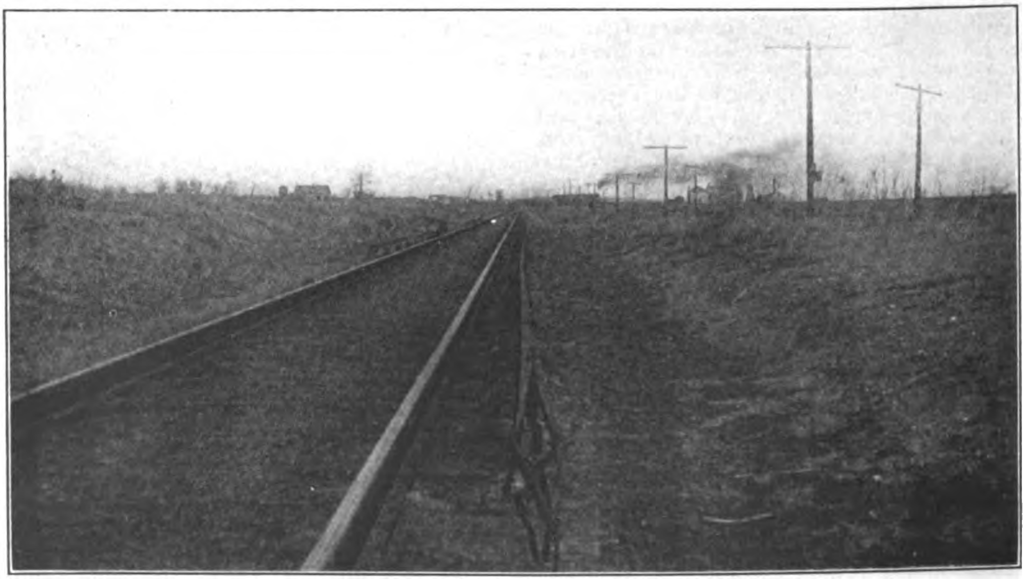
of trainmen. Later, it may be found necessary and profitable to place a telegraph operator on limited trains running long distances without stopping to handle commercial telegrams for the public. Telegraph offices on trains in the future may be of as much value to the public as branch offices in hotels and other places where people congregate in large numbers.

"Railroads can now go ahead and install the service without any fear of failure. There are many fields for the wireless telegraph in railroad operation, in routine business, and emergencies when lives and property can be saved by its use."

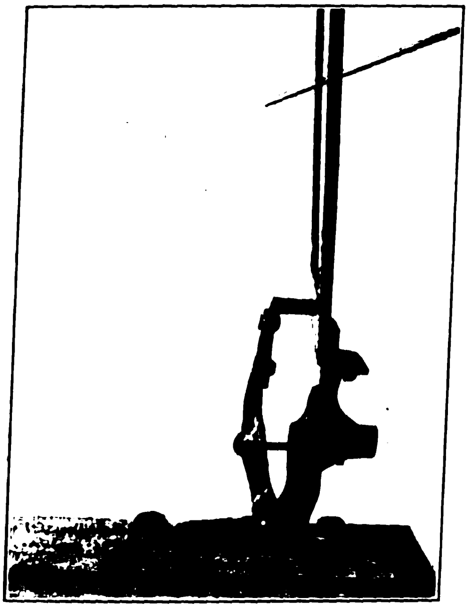
A Timely Automatic Train Stop.

AT the recent International Exhibition of Safety Appliances, held in the Grand Central Palace, New York City, was exhibited a vast collection of devices to protect human life and limb when exposed to danger.

Among the most interesting was the Wooding automatic train control or stop. It is now being displayed for the benefit of the investigating railroad officials at the Permanent Country Life Exhibition, third floor, Grand Central Depot,



THE WOODING AUTOMATIC TRAIN STOP DEVICE, SHOWING THE CONTACT PLATE INSTALLED ALONG THE TRACK.



U Shaped Blade Engaged in Short Section of Contact Blade.

Note the double or knife blade contact and the perfect adaptability of both.

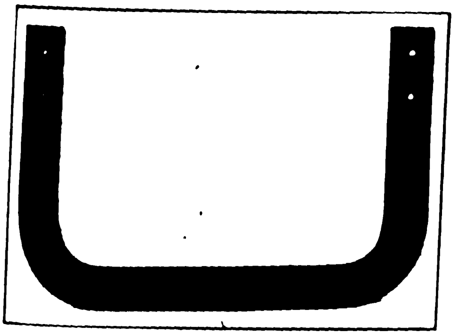
A Short Section of Contact Plate Showing Weather Proof Protection.

They are sixty feet long, bolted to the end of the ties where stop operation is desired.

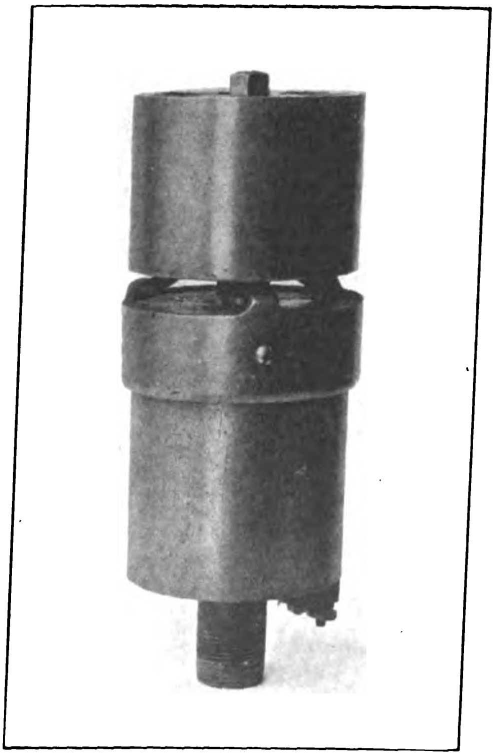
New York City. This device is the invention of Dr. B. F. Wooding, of Denver, Colorado, who has spent fifteen years in perfecting it. As shown by the accompanying illustrations, the parts are few and simple and it operates through the best known physical requirements.

In its operation the track is arranged in blocks with a track battery at one end controlling a track relay at the other, and a line wire running from one relay to the next as under the present system. At the relay is a twelve volt battery as under the present system, connected in such a way that when the relay is closed, as it would be when the block is clear, the return current will pass through the track rail to the far end of the block back.

A specially designed weather-proof contact plate sixty feet long with properly flaring ends, so as to engage the contact blade of a passing train, is bolted to the ends of the ties at a point where it is determined that the engineer should apply his brakes when the next block is occupied by a dangerous condition. This management of the plate makes it a part of the track proper, which is ideal. It is also made a part of the line wire circuit described, so that it cannot be moved without breaking the



The Strong U Shaped Steel Contact Blade Which Has Had Nine Months of the Roughest Use.



The Magnet Controlled Air Valve with Whistle Attached.

It lets go when the current is absent, setting the brakes and blowing the whistle with the released air.

circuit which would stop an approaching train in the preceding safe block.

On the engine or train is the magnet controlled air-valve with whistle attached, a small storage battery and a strong steel blade insulated and hinged to a journal box of the tender. The electrical supply from this battery passes through the blade to insure its perfect condition, and energizes the magnet to hold the air-valve closed while the train is passing from one contact plate to the next. As the train passes, the contact blade enters the contact plate through the flared slotted end and is deflected so as to break the electrical supply on board the train. Then the magnet valve must get its electrical supply from the clear block ahead, as described, or instantly become de-energized and release the strong air pressure, setting the brakes and blowing the whistle. This will be the case should the block ahead be occupied by another train, open switch, a car too near the end of a switch, train on a crossing, broken rail, mud earth slide, etc., or any thing that will cause the relay to fall open and cut off the electrical supply from that block.

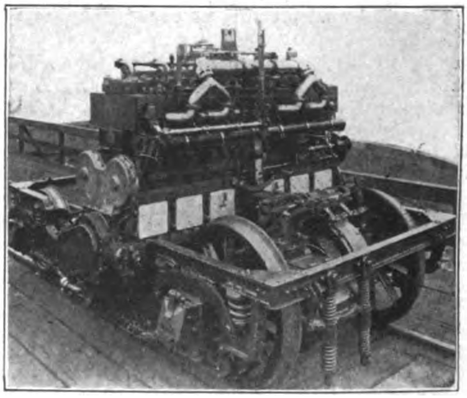
It is claimed that by connecting these track contact plates in the line wire circuit of the present distant signal system and installing the simple equipment on the engines, an automatic train stop would be provided at a minimum expense. Roads that cannot afford to install and maintain the distant signalling system can secure full protection by installing this automatic stop independently with the simple circuits described.

While each part of this device is especially designed for its particular purpose, the feature which places it in a class by itself, is its weather-proof contact. It is only about one-fourth the size of others, gives the greatest clearance, the least physical obstruction, and is exceedingly durable. There is not the slightest appreciable jar when the contact blade engages the contact plate.

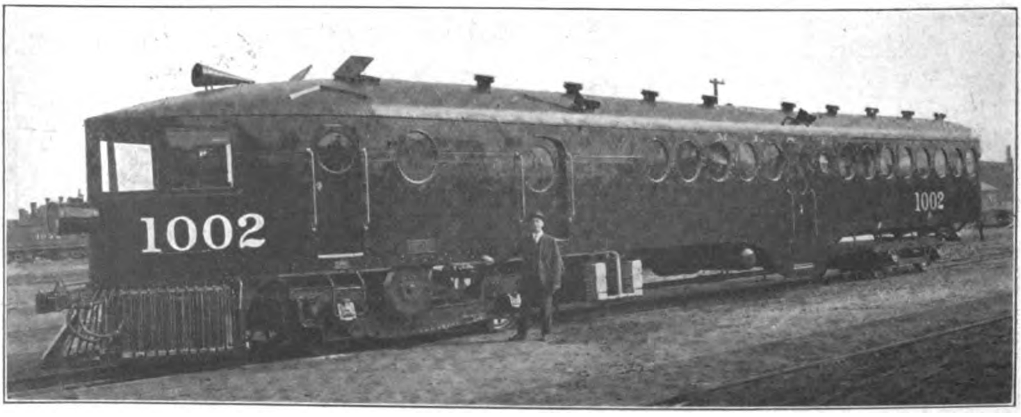
Notwithstanding the many vital functions to be performed by this device it does not make a single mechanical movement. It simply lets go when approaching too near a dangerous condition or on account of defect in itself, by arranging for the absence of the electrical current under such conditions. Hence complications and expense in either installation and maintenance are reduced to a minimum.

Sunset-Central Motor Cars.

NEW Model McKeen gasoline motor cars (Type "C") have been built for and delivered to the M. L. & T., G. H. & S. A. and H. & T. C. Railroads of Louisiana and Texas. One of the new cars and front truck are herewith illustrated, from which it will be noted that the car body is practically identical with the original design of the McKeen Standard car, the tri-unit of operation principle being (1st) VEHICLE, car body, (2nd) PRIME MOVER, internal combustion engine, and (3rd) MECHANICAL TRANSMISSION. With this mechanical transmission of 96 per cent efficiency—a transfer to the driving wheels of 96 out of every 100 horsepower of the crank shaft renders improvement of transmission efficiency improbable. While the latest model motor truck maintains the McKeen standard motor car principles, the new design is the result of nine years' experience in the manufacture of these cars and combines the collective experience of fifty odd



Forward Truck of McKeen Motor Car, Showing Engine.



The Latest Example of the McKeen Motor Car, of Which a Number Were Recently Ordered by the Southern Pacific.

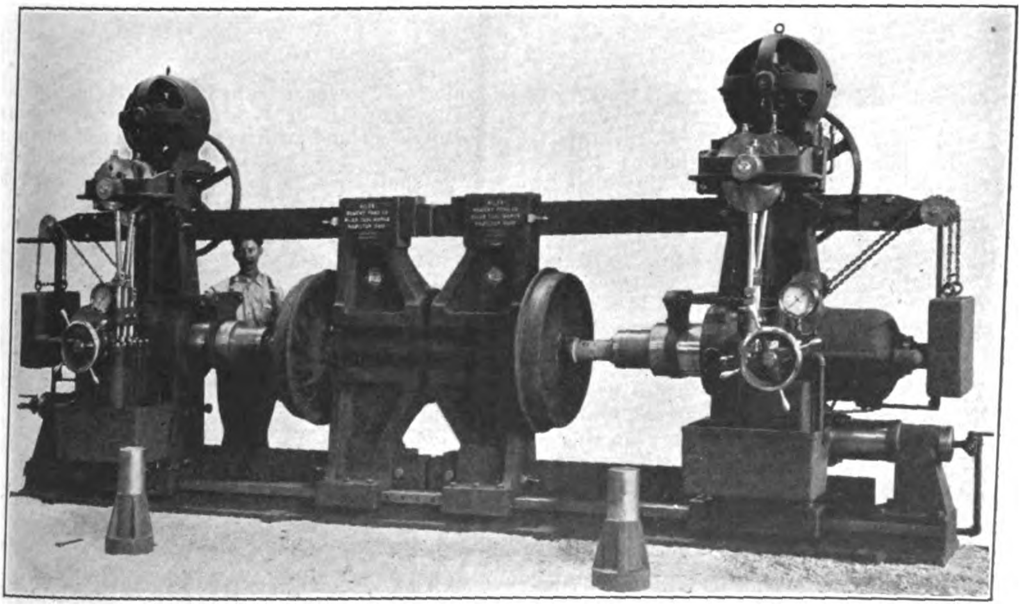
railroads using this equipment. While the new car is of no greater efficiency its up-keep and maintenance charges are materially reduced. A seven year old car recently made the attractive record of covering over 5,000 miles during the month, earning $117 per day at a total operating charge of fourteen cents per mile. It is beyond reason to expect any greater economy or greater efficiency with such earning capacity equipment.

The gasoline engine is really a motor, entirely enclosed and practically fool proof; the machinery is self-lubricated, operates automatically as far as practicable, the idea being to eliminate almost entirely the personal equation of the operator.

General specifications of the Sunset-Central Cars are: Engine, 200 horse power McKeen standard, six cylinder, air starting and reversible. Weight of car in working order, 78,000 lbs. Length between pulling faces of couplers—72 ft. 3¾ ins. Length over end sills—70 ft. Length of engine compartment—13 ft. 8 ins. Length of baggage compartment—8 ft. 6 ins. Length of smoking compartment—16 ft. 4⅛ ins. Length of passenger compartment—28 ft. ⅞ ins. Width inside—9 ft. 4¾ ins. Width over side sills—9 ft. 8 ins. Width over sheathing—9 ft. 8¼ ins. Width over all—10 ft. 2¾ ins. Height, top of rail to top of car, (light) 11 ft. 9 3-16 ins. Height, floor to ceiling at center of car—7 ft. 5⅝ ins. Seating capacity, passenger compartment 54, smoking compartment 29. Total—83.

A Double End Car Wheel Press.

THE car wheel press shown in the accompanying illustration, manufactured by the Niles, Bement, Pond Company, is of the double end variety, and so constructed that two wheels may be removed or two wheels may be pressed on simultaneously. When tended by three men, who handle the wheels, axles, and operate the machine, thirty pairs of wheels can readily be pressed off or twenty pairs pressed on, per hour. The capacity of the press is 500 tons, and it takes wheels up to 42 inches in diameter on the tread. Each head is a self-contained unit, motor driven, and includes pump, tank, pressure gauge and controlling apparatus.



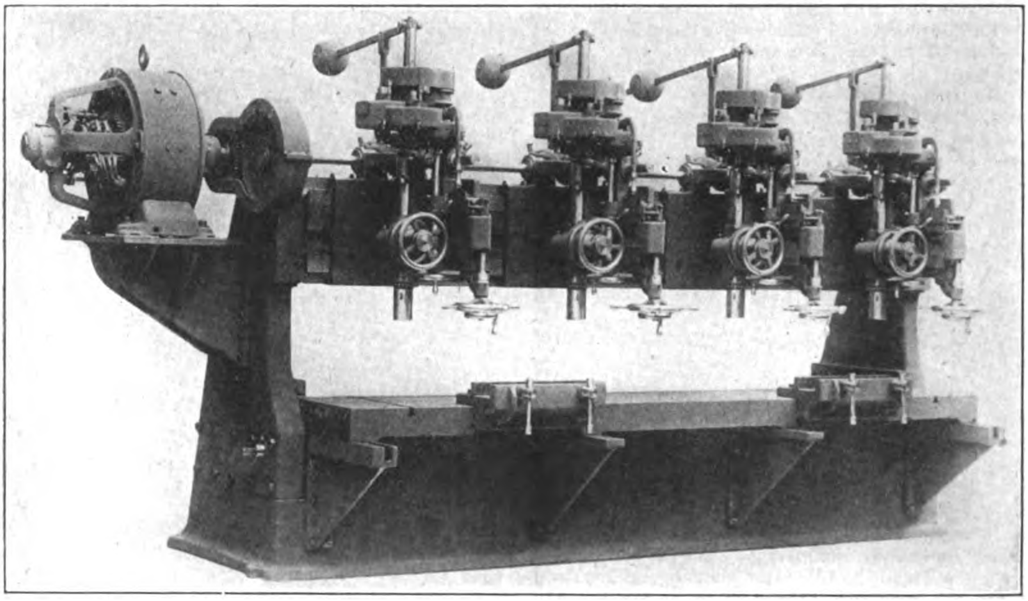
A Double Car Wheel Press Manufactured by the Niles, Bement, Pond Company.

Motor-Driven Mud-Ring and Flue-Sheet Drill.

THE accompanying illustration shows a Foote-Burt four-spindle drill installed in the Juniata shops of the Pennsylvania Railroad, where it is used for drilling the rivet holes around fire box mud-rings and the flue holes in boiler flue sheets.

The heads of this machine have an adjustment in and out from the main cross-rail of twelve inches. They are also adjustable on the main rail up to a minimum center distance of eighteen inches. Both of these adjustments are controlled by individual hand-wheels shown on the front of each slide.

The heads carrying the spindles are complete in themselves as each is arranged with a clutch for stopping and starting. Also each is fitted with geared power feed with adjustable stop for automatically knocking off same at any desired point. Two changes of power feed are provided on each head, either one of which is instantly available by simply shifting a lever conveniently located. In addition to power feed each spindle



A Four Spindle Drill Employed for Drilling Rivet Holes Around Fire Box, Mud Rings and Flue Holes in Boiler Flue Sheets.

is furnished with hand feed through work gearing.

The rail of the machine is very heavy and of box form. The base is of continuous box section and the table is arranged with T-slots and fitted with removable mud-ring chucks. The table has an in and out motion of 36 inches controlled by a lever at either end of the machine.

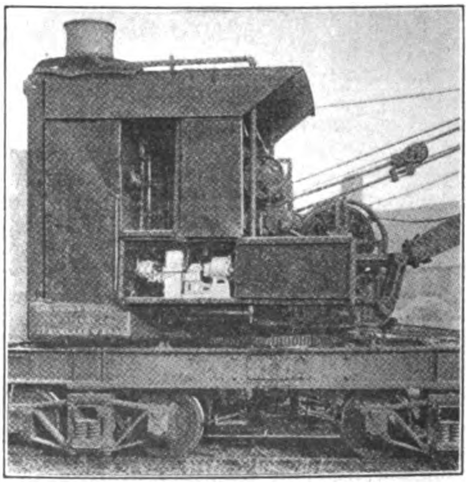
The motor is of Westinghouse make, twenty horse-power and with speed adjustment of from 375 to 1500 r. p. m. It is geared direct to the drive shaft by a large spur gear and a rawhide pinion, both of which are guarded.

The weight of the machine is 23,000 pounds.

Locomotive Crane Equipped with Turbo-Generator Set.

THE Brown Hoisting Machinery Company, of Cleveland, has recently equipped a fifteen-ton capacity locomotive crane with a Terry turbo-generator 5-k.w. set. In this way, the crane can be operated independent of power wires, which it is usually necessary to drag along the tracks where locomotive cranes using electro-magnets are employed. In the case of the crane herewith referred to, the magnet is energized by current from this unit, the location of which is shown in the accompanying illustration. The crane itself, is handled by a reciprocal engine in the usual way and the movement of the boom is taken care of in a similar manner.

Among the special features of this turbo-generator, is an indestructible rotating wheel so rugged as to be unaffected by the large quantities of water due to starting up from cold. Full power, it is asserted, can be obtained in less than a minute and aside from oiling, the turbine receives no attention. As indicated in the photograph, the whole set is a pocket or shelf completely out of the way, and in operation is hidden from sight by the door of the compartment.

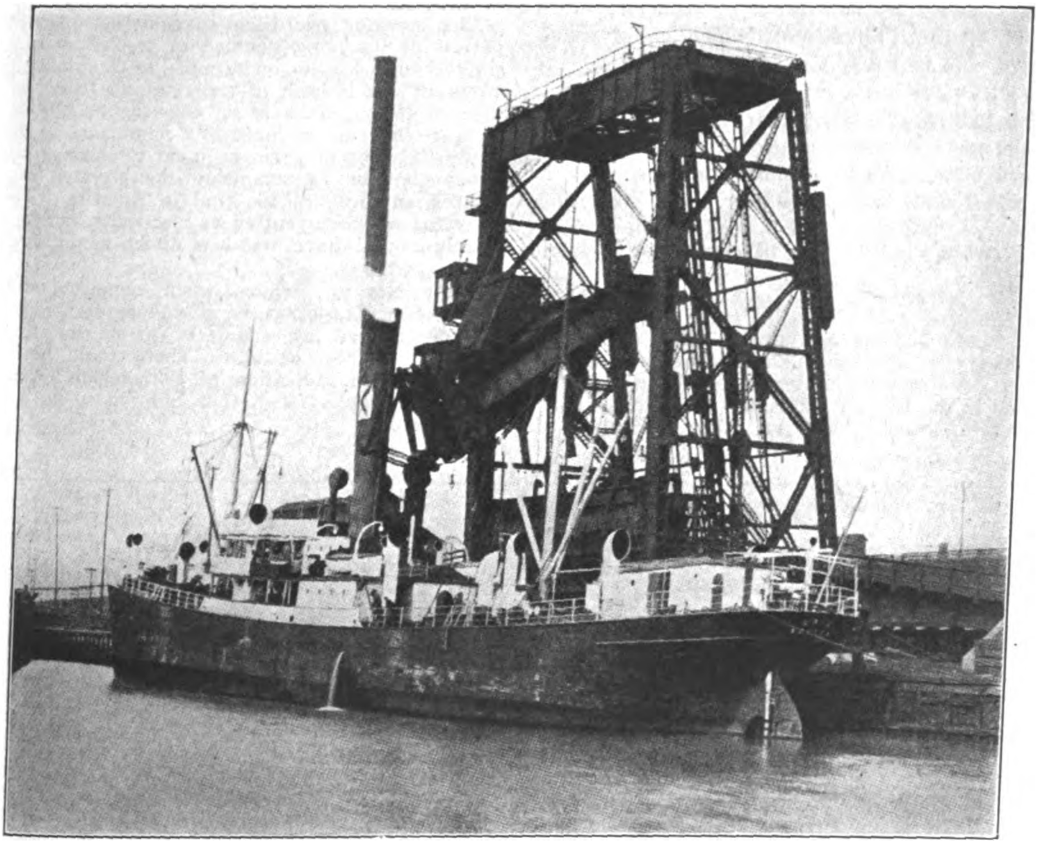


Locomotive Crane Containing Turbo Generator Which Energizes Magnet at End of Crane.

Terminal Improvements

Pennsylvania Railroad's New Coal Elevator.

THE Pennsylvania Railroad has recently installed at Greenwich Pier, Philadelphia, a new coal loading device which assures the quick loading of vessels. The accompanying illustration gives an excellent idea of its general appearance. Cars of fifty tons capacity are raised on an elevator to the mouth of a large chute and the entire car dumped at one time. Thirty cars an hour can be handled in this way, which means that a cargo of 6,000 tons of coal can be loaded in four hours.



NEW COAL LOADING DEVICE OF THE PENNSYLVANIA RAILROAD.

Comfort for the Ladies.

THE Chicago and Northwestern Railway in the building of its new Chicago station, has made a special provision for the comfort of women and children which is being much appreciated and talked about. Six rooms are reserved for their exclusive use, and are furnished with a view to giving every woman stopping in the Terminal personal attention and a maximum of comfort.

Entering the Terminal, they are first met by a uniformed attendant who offers to carry her hand baggage, and escort her to the private elevator which will convey her to the women's apartments. These are located on the second and third floors, removed from all noise and confusion of the city, and include Waiting, Rest, Retiring, Emergency, Tea, Nursery and Hospital rooms.

Experienced and accommodating matrons, nine in number, have been placed on duty in the various rooms, ready to supply such things as patrons may need or request.

In the nursery room, which is a decided innovation, a motherly woman is on duty at all times to relieve mothers of the care of children while they repair to one of the other apartments and enjoy an hour or so of perfect rest. In the nursery room are four cribs for the little ones, while the other part of the room is given up to larger children who may here romp and play to their hearts' content. As many as thirty little ones have been accommodated here at one time.

The waiting room is located on the second floor and is entirely separated from the main waiting room. Comfortable chairs, tables and other furniture to make it cozy have been placed in the room. The other private apartments for women are located on the third floor.

In the women's rest room are easy chairs, tables and attractive stationery for those who would correspond.

In the emergency room, rocking chairs, settees and lounges afford opportunity for a quiet nap if one is indisposed.

The retiring room is a great comfortable place, supplied with rockers, chairs and tables.

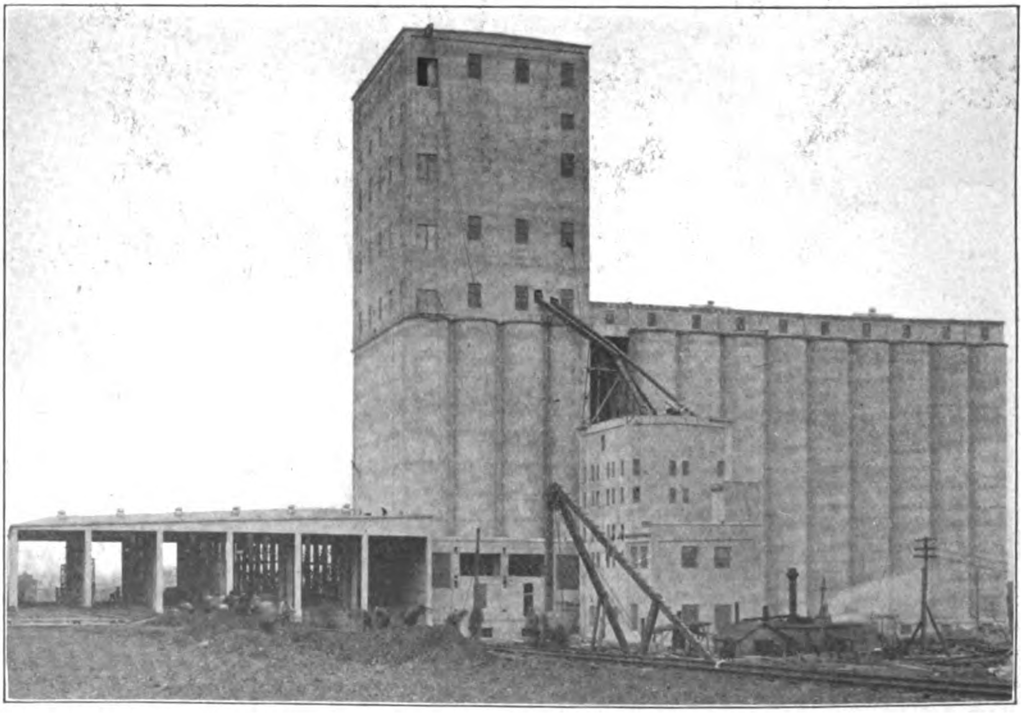
New Philadelphia Grain Elevator.

THE Pennsylvania Railroad has nearly completed its new grain elevator at Girard Point, Philadelphia, which, it is anticipated, will be ready for operation on March 1st. This elevator has a capacity of 1,100,000 bushels with facilities for handling every hour, twenty-four cars of 2,000 bushels capacity each, and for loading grain on steamships or barges, at the rate of 60,000 bushels an hour. Two steamships and two barges may be loaded at one time, or the entire capacity may be concentrated on one vessel.

The conveyor gallery is 1,200 feet long, and is equipped with four belts, each with a capacity of 15,000 bushels an hour. The dock on one side is 900 feet long and on the other side 400 feet. A grain dryer, which is the largest of its kind in the United States, has a capacity of from 3,000 to 8,000 bushels an hour. Four of the latest grain cleaning machines are installed, each of 4,000 to 5,000 bushels capacity an hour.

The elevator has been so constructed as to permit of its being doubled or trebled without interfering with its operation. It is absolutely fireproof. It is built of concrete and reinforced steel, and by reason of its construction, the insurance has been reduced to a minimum. In the rapid handling of grain from car to elevator and from elevator to steamship the elevator surpasses anything of its kind in America. The elevator will be operated by electricity and each machine will have its own direct motor power.

This elevator, which, when completed, will cost about $1,250,000, is of unique design, and is pronounced by engineers to be the most efficient in the world. There could be no more certain indication of Philadelphia's commercial progress than this addition to its port facilities.



NEW PHILADELPHIA ELEVATOR, WITH CAPACITY OF 1,100,000 BUSHELS.

Developments at Spartanburg, S. C.—To provide additional facilities for promptly handling the growing volume of package freight moving through the transfer at Spartanburg Junction, the Southern Railway is making a 275-foot extension to the present covered platform which is 802 feet long and is installing electric lights to serve the entire plant, thus making it possible to work double shifts as well as giving increased floor and track space.

Interstate Commerce Commission

Commission to Examine and Test Safety Appliance Devices.

A CIRCULAR has been issued by the Commission announcing the intention of the Safety Appliance Division to examine and test any safety appliance device offered. The circular said:

"Any person desiring to submit for consideration an appliance or system intended to promote the safety of railway operation should forward complete specifications and detailed prints or drawings, showing fully and clearly the construction, application and method of operation of the appliance or system. The drawings should be made of convenient size for handling and filing, and drawings not larger than nine by fourteen inches in size are preferred. The specifications and plans should be accompanied by a statement showing the following:

1. Name of appliance or system.
2. Name and address of proprietor.
3. Number and date of United States patent or patents.
4. Purpose of the appliance or system.
5. Brief statement of how the purpose is carried out.
6. General description.
7. Statement of relation to other apparatus or operations.
8. Name of railroad or railroads on which used or tried and length of time in use.
9. Name of town, district or railroad division where used or tried.
10. Name of railroad officers of whom inquiry may be made.

"All plans, specifications, drawings and other descriptions which are furnished for examination become a part of the Commission's records and must be retained in its files. When an examination has been completed the papers furnished for such examination will not be returned. For that reason original patents, tracings, or other papers of that nature, which may be of particular value to inventors or proprietors should not be furnished; instead, copies of patents, blue prints, or other descriptive papers of which duplicates can be obtained by the proprietor should be sent. The commission can furnish no protection of the inventor's or proprietor's rights in any device submitted; therefore, plans should not be submitted until the rights of the inventor or proprietor are fully protected by patent or otherwise.

"It is not necessary to submit models of devices. If for any reason it is desired to do so, however, models may be furnished provided the proprietors pay all transportation charges. After examination, models will be returned, if the proprietors so request; but this must also be done at the proprietor's risk and expense. Otherwise models will be destroyed. In every case, however, whether or not models are supplied, complete detailed plans and specifications must be furnished; no report of opinion will be based on examination of a model alone.

"When complete plans of any appliance or system have been furnished they will be placed under examination; after this examination has been completed the person submitting the device will be informed of the results thereof and the conclusions reached.

"Arrangements for tests will not be made until an examination of plans has been completed, and then only when the examination of plans discloses the necessity or desirability of conducting a test under service conditions. In case a test is to be made the apparatus must be furnished, installed and operated without expense to the Commission."

Commissioner Prouty on the Regulation of Securities.

COMMENTING on the bill introduced by Representative Cullop, of Indiana, at the instance of Interstate Commerce Commissioner Prouty for the complete control by the Commission of the issuance of railroad securities and purchase of any interest in other common carriers, Mr. Prouty writes the Boston News Bureau:

"This bill was hastily drawn and is undoubtedly open to criticism at many points.

"My intention was to draft a bill which would, if properly administered, prevent those things which have most brought disaster upon railroad investments, but which at the same time would leave the railroad operator, if he kept within his legitimate sphere, free to finance his property without unnecessary restraint.

"If our railroads are to live permanently under regulation some room must be left for private initiative and private enterprise."

Violations of Service Law.

IN commenting on the Interstate Commerce Commission's recent report of railway violations of the hours of service law for the year ending June 30, 1913, in which nearly 300,000 violations of the sixteen hour limit were reported by 269 railroads during the year, but in which the Commission's analysis points out that while this figure may appear abnormal to the lay mind, it must be remembered that 251,111 men were employed in handling trains during the year and that the excess service probably would not exceed one instance to each employe, Commissioner Charles C. McChord has had the following in part to say:

"Violations of the law limiting service of train employes on American railroads to sixteen consecutive hours go to the very heart of efficiency and train operation.

"The difference in efficiency and safety of operation between various railroad systems, is shown clearly by the Commission's analysis in the marked disparity betwen the ratio of excess service to mileage between railroads serving practically the same territory. For instance, one of the Eastern roads, operating more than 5,300 miles of track, reports 5,224 instances in which train men were on duty for periods longer than those provided by law; while another road in the same territory, with a mileage of less than 3,500 miles, reports 22,663 such instances. A comparison of the figures submitted by two of the principal Eastern lines shows, respectively, a mileage of 2,258, with 5,451 instances of excess service, as compared with 2,389 miles and 16,448 instances. In the prairie country, one road, with a mileage of 4,755, reports approximately 20,000 instances of excess service, while another road in the same territory, with more than 7,500 miles of track, reports only 2,310 instances of excess service.

"In the southwestern territory, one road operating less than 6,400 miles of track reports approximately 1,700 instances of excess service, while another line similarly situated geographically, reports only 280 instances on a mileage of more than 7,504 miles. A corresponding comparison between two roads in the northwestern section of the country shows a mileage of approximately 8,000 miles with less than 800 instances of excess service, while another road with less than 10,000 miles of line reports nearly 6,000 instances of excess service."

The law provides a maximum of sixteen hours as the limit of continuous service for trainmen engaged in the physical operation of trains. This law admittedly is being violated continually by the railroads—many time unavoidably. The carriers are required to report each instance in which an employe served more than sixteen hours consecutively, a fine of $500 being the penalty for failure to report. The analysis shows that derailments afforded the most prolific cause of excess service, 88,317 cases being attributed by the carriers to that generic cause. In 33,360 instances the delays were due to coupler and drawbar defects, while 17,753 cases were attributable to miscellaneous car defects. Land slides, high water, and fire were reported by the carriers involved as responsible for 17,985 cases, and congestion of traffic resulted in 13,812 employes exceeding the limit of service. In 10,620 instances the excess service was caused by track defects and obstructions not resulting in collisions or derailments, while 9,910 cases were due primarily to collisions.

Under the heading of "engine delays," 15,507 instances of excess service were reported as attributable to miscellaneous mechanical defects; while other engine delays usually incident to the operation of trains were responsible for nearly 10,000 additional cases.

"As a result of the prosecutions instituted by the Commission," the analysis points out, "the number of instances of excess service reported during the last six months, as compared with the corresponding figures for preceding years, has shown a marked reduction."

"My belief is," said Commissioner McChord, "that the carriers involved will concede to the Commission's analysis of their reports such a degree of attention as will enable them, by apprising themselves of the preventable causes of excess service, to eliminate the majority of instances in which employes heretofore have been permitted or required to remain on duty for longer periods than sixteen consecutive hours."

TRAFFIC.

Latest Statistics of Foreign Trade.—The Department of Commerce has made public the figures showing the total values of imports into and exports from the United States for the five months, July to November, inclusive, for the years 1911, 1912 and 1913, and also those showing exports of domestic manufactures by great groups for the same period.

Imports for November, 1913, were $148,222,733, as compared with $153,094,898 for November of 1912, a decrease approaching $5,000,000. Imports for the five months of 1913, as shown in the table, were $728,870,201, as compared with $779,325,885 for the corresponding period of the preceding year, a decrease exceeding $50,000,000.

Exports for November, 1913, were $245,550,392, as compared with $278,244,191 in the same month of 1912, a decrease of nearly $33,000,000. Total exports for the five months' period, July to November, inclusive, of 1913, were $1,084,551,655, as compared with $1,049,285,983 for the corresponding period for the preceding year, showing an increase in 1913 in excess of $35,000,000. Comparing the exports with the imports, it shows a trade balance in our favor of $355,681,454 for the five months' period.

Vessel Measurement for the Panama Canal.—President Wilson has issued a proclamation prescribing the "Rules for the Measurement of Vessels for the Panama Canal." The proclamation is brief; the rules and illustrating diagrams cover twenty pages. They are based upon research made by Prof. Emory R. Johnson who has brought under survey all the rules of measurement of all civilized countries and evolved a system peculiar to the Panama Canal and apparently in advance of the measurement system of vessels using the Suez Canal.

As part of the proclamation, a form of tonnage certificate for ships using the Panama Canal is attached. All vessels of commerce, transports, colliers, supply ships and hospital ships, without such authenticated certificates stating the vessel's gross and net tonnage as determined by these rules, will have to submit to measurement before passing through or clearing from the Canal. All war ships, American and foreign, will have to present duly authenticated displacement scale and curves, stating accurately the tonnage of displacement at each possible mean draft.

Taken in connection with the proclamation of President Taft of the 13th of November, 1912, stating that the toll per net vessel ton would be $1.20 the commerce of the world is now in a position to figure cost and advantages of using the canal. The system worked out by Prof. Johnson is eminently fair, the net tonnage being arrived at by a liberal system of deduction for all space that can not be used in a direct earning capacity.

Cars Worth More Than Demurrage.—M. W. Rotchford, manager of the Illinois & Iowa Demurrage Bureau, has issued a strong circular designed to promote car efficiency. Records of 45 principal lines within the territory of the bureau for the first seven months of 1913 shows an increase in cars handled of 12.2 per cent over the corresponding period of 1912, while the increase in cars earning demurrage is 61.15 per cent. The total demurrage earned this year, $273,191, represents an increase of 68.16 per cent. This large increase in demurrage earnings and collections, the circular says, compared with the increase in cars handled "at first sight might be taken by some to indicate a favorable showing, but such is not the case when car efficiency is taken into consideration. The question that naturally arises is—then what does it indicate and what is the remedy? It means: (1) that cars are being delayed in loading and unloading to a greater extent; (2) that 24,673 more cars were withheld from transportation service by some patrons at the same time other patrons were wanting cars; (3) that the railroads' cost of operation was increased by reason of extra switching caused by excessive detention. The remedy is: (1) education of the patron to the fact that the railroad prefers the cars to the demurrage charge; (2) an additional incentive to patron to return cars more promptly to transportation service; (3) increase the demurrage rate to $3 per day, which, according to experience in California lessens car detention.

"There is an erroneous impression abroad that the railroads are satisfied when they collect the demurrage due. While it is incumbent upon the railroads to collect in accordance with their tariff and upon patrons to pay, the railroad loses about $2 per car per day when it collects a dollar demurrage, as the average daily earning is about $3 per car."

A Smaller Classification Committee.—A permanent committee of three to replace the Western Classification Committee of the 52 railroads West of Chicago has been determined on by the Executive Board of the Classification Committee. The three members will hold continuous sessions and this will do away with the delays which resulted when only two meetings a year were held by the whole committee.

ORGANIZATION NOTES.

December Meeting of the Canadian Railway Club.—The Canadian Railway Club at its December meeting, listened to an interesting address by Mr. L. R. Johnson, general superintendent of the Angus shops district, of the Canadian Pacific Railway, on "First Aid to the Injured," as talked and practiced by the St. John Ambulance Association, under the auspices of the Order of St. John of Jerusalem in England.

Meeting of Reading Telegraphers.—To improve working conditions of the telegraph department of the Reading Railway and its allies and leased branches the first annual meeting of the Independent Order of Railway Employes was held in Reading, Pa. Grand President James F. Tatlow, of Philadelphia, presided. President Tatlow explained the aims of the organization, centering particularly on the proper instruction of telegraphers for improvement of their conditions of labor.

"See America First" Movement to be Abandoned.—At a recent meeting of the American Association of General Passenger and Ticket Agents it was decided to abandon the "See America First" movement as a subject for collective action. Its agitation for two years has afforded some benefit to the roads through widespread publicity.

Charles Nagel Addresses Traffic Club of St. Louis.—Charles Nagel, former secretary of the United States Department of Commerce and Labor, in an address before the sixth annual dinner of the Traffic Club of St. Louis in the Mercantile Club urged an intimate co-operation and closer relationship between the United States Department of Justice, Department of Commerce and the Interstate Commerce Commission in order to obtain what he termed a greater commercial development in America.

Mr. Nagel declared no railroad could give satisfactory service unless it had compensating rates. He said it is time for some well-defined and common action to be taken in the matter in reaching a settlement.

Mr. Nagel spoke 45 minutes. He favored a greater development of foreign commerce. He indorsed conservation, but said something should be done in Alaska to allow large development of its lumber and commercial interests. He said that it was better to plant a tree, take it up and use it commercially and industrially than to plant one tree and let it rot for want of use.

Following his address, the meeting adopted a resolution indorsing a proposed five per cent uniform increase in shipping rates by various railroads. A copy of the resolution will be sent the Interstate Commerce Commission in Washington, D. C.

Meeting of Central Passenger Association.—Representatives of railroads affiliated with the Central Passenger Association decided at a meeting held in Chicago, November 12th, to establish a uniform charge of $25 for each one-way movement of special passenger or baggage cars. The charge for this service on a number of roads has been $15 a car.

Annual Meeting of New York Railroad Club.—At the annual meeting of the New York Railroad Club, the following officers were installed for the ensuing year: President, George W. Wildin; vice-presidents, C. W. Huntington, Frederick C. Syze, and Burton P. Flory; treasurer, R. M. Dixon; executive member for three years, Miles Bronson; member of finance committee for three years, Charles Shults.

An interesting feature of the evening was a paper on the "Past, Present and Future of Railway Clubs," presented by Daniel M. Brady. Other speakers were F. W. Brazier, J. Seavers Page, J. B. Anderson, James Powell, of Montreal and F. O. Robinson, of Richmond, Va.

The annual report of the secretary showed a total membership of 2,029 of whom more than 1,000 are in New York and that of the treasurer that the club has a surplus of more than $14,000 in its treasury.

President J. M. Fitzgerald Addresses Toledo Traffic Club.—"Railroads and the High Cost of Living" was the subject of an address by J. M. Fitzgerald, president of the Western Maryland Railway Company, before the Traffic Club, at Toledo, Ohio, November 25th. He said in part:

"Railways cannot continue to provide necessary and efficient transportation facilities on the present rates of compensation allowed for the service of transportation, and which rates are no longer sufficient to carry the high cost of operations due to constantly increasing rates of wages and taxes, full crew bills, safety regulation appliances and other expenditures imposed by Federal and State Legislations and still leave a surplus from operations sufficient to attract new capital.

"The interests of the railways, their security holders, their employes, the shippers, the passengers and the public are identical. By no process of reasoning can you separate them. Therefore, we should all be concerned regarding the conditions now confronting the railways, and which difficulties may be met in one of three ways:

"First—By a reduction in wages, which cannot be considered at this time.

"Second—By reduction in other items of expense, which would of necessity impair the present transportation service and which would, of course, not be tolerated by the public.

"Third—By increased rates."

Election of Officers for Brotherhood of Locomotive Engineers.—The Legislative Committee of the Brotherhood of Locomotive Engineers closed a three days' meeting at Springfield, Ill., on December 6th, with the election as follows: Chairman, J. A. Culp, Blue Island; secretary-treasurer, C. E. Long, Charleston; vice-chairman, C. C. Collier, Mount Carmel; honorary vice-chairman, Lewis McGovern, Freeport. Advisory Board—P. E. Brady, Springfield; Frank Sullivan, Chicago; J. D. Maroney, Salem; Frank Warne, Chicago.

Without a dissenting voice, the committee went on record as opposed to the electrification of all terminals in Chicago as a means of abating the smoke nuisance. One of the arguments advanced was that the danger to life would be greater through the operation of electric engines.

Meeting of American Railway Association.—At a meeting of the American Railway Association held in Chicago, December 3rd, it was decided to submit the question of reclaim charges by switching lines to a vote of all members of the organization. The vote to be taken by letter ballot. The proposition to be voted upon reads as follows:

"The per diem actually paid on each car in switching service may be reclaimed by the switching line from the road for which the switching was performed, subject always to a maximum amount per car, which shall be based upon the number of days required to perform the service. The maximum amount shall be limited to four days on each car, except at certain points, where it shall be limited to six days per car. The roads directly interested in any city of junction have the privilege of determining any less limit satisfactory to them, subject always to the above-named provisions. No reclaim shall be allowed for an intermediate switching movement and no double reclaim shall be allowed."

National Industrial Traffic League Working Against Time Limit Rule.—Officials of the National Industrial Traffic League are planning to hold a series of conferences with representatives of railroads throughout the United States for the purpose of having the present time limit rule for the presentation of loss and damage claims abolished.

In the event of loss or damage incurred in transportation the railroads now require shippers to present claims within four months after delivery or if delivery is not made within four months, after a reasonable time for delivery has elapsed.

It is contended that shippers find it impossible in many instances to present loss and damage claims promptly because consignees fail to inform them that property has been lost or damaged while in transit.

On this account, it is said, shippers have been barred by the four-month rule from collecting claims in thousands of instances. The rule is incorporated in the bill of lading and the National Industrial Traffic League has taken the position that if such a limitation is to be established it should be incorporated into a law.

Railroad officials assert that a time limit should be enforced in order to protect the carriers from fraudulent claims. Officials will agree, at least, to abolish the rule until an opinion concerning its reasonableness is obtained from the Interstate Commerce Commission.

January Meeting of the Baltimore Traffic Club.

THE January meeting of the Baltimore Traffic Club was held on the evening of the second instant. The evening was spent in the enjoyment of a smoker, routine matters only being discussed. One matter of importance disposed of was the selection of January 22d as the definite date for the annual banquet. President Elliott and the Entertainment Committee are planning several interesting features and a thoroughly enjoyable evening is anticipated.

An important change was made in the constitution and by-laws at this meeting, the date for the monthly meetings being changed from the first Friday to the second Tuesday in each month.

A nominating committee of seven members was elected to report a ticket of officers to serve for the year 1914.

The Traffic Club of Baltimore is now just one year old and the year's growth has been very satisfactory, the membership having more than doubled.

January Meeting of Central Railway Club.

THE January meeting of the Central Railway Club was held in Buffalo on the evening of January 9th. Mr. Walter V. Turner, of Pittsburgh, chief engineer of the Westinghouse Air Brake Company, presented a paper on "Air Brakes: Why Their Possible Utility and Performance is Not Obtained in a Higher Degree in Actual Service," and the subject proved to be one of unusual importance and interest to the members. Mr. Turner employed a series of lantern slides which helped him to deal in an interesting manner with the principles underlying brake design and the importance of proper combinations and compromises in all that is involved. His talk covered many conditions of service which required to be discounted in the operation of brakes if desired results and loss are to be avoided and he also discussed at some length the means employed for actuating compressed air brakes which may be either pneumatic or electro and either of these manual or automatic. The aim of the lecture was to impress upon all concerned the importance:

First.—"Of the design of the air brake.

Second.—"The proportion of the design to be maintained in the installation and in service.

Third.—"That these two requirements are vastly more important than what is generally intended by the expression air brake maintenance; that is to say, the cleaning, repairing and various other items involved in attempting to secure proper operation of the brakes.

"The very best brake may be a money losing and trouble creating device in spite of all the maintenance that can be given it if its design and proportions are not maintained in the installation; and closely related to this is the necessity that the limitations of its performance be thoroughly known to those who are using it. The service has become so severe to-day that only the very best brake can produce results at all parallel to those of a few years ago unless much latitude is allowed the engineer both in time and distance with which to control his train."

International Engineering Congress.

IN connection with the Panama-Pacific International Exposition in San Francisco, in 1915, there will be an International Engineering Congress, in which engineers throughout the world, representing all branches of the profession, are invited to participate. A most cordial invitation is extended to engineers to become members of this Congress, and to participate in its deliberations.

The Congress is to be conducted under the auspices of the following five National Engineering Societies, namely: the American Society of Civil Engineers, the American Institute of Mining Engineers, The American Society of Mechanical Engineers, the American Institute of Electrical Engineers, and The Society of Naval Architects and Marine Engineers.

The organization and conduct of the Congress have been placed in the hands of a Committee of Management consisting of the Presidents and Secretaries of these five societies, and of eighteen other members representative of them and resident in or near San Francisco.

The executive offices of the Committee of Management are located in the Foxcroft Building, San Francisco, Cal. The chairman of this committee is W. F. Durand, the secretary-treasurer, W. A. Cattell, and the executive secretary, E. J. Du Puy.

The honorary officers of the Congress will consist of a President and a number of vice-presidents, selected from among the most distinguished engineers of the world.

Colonel George W. Goethals, Chairman and Chief Engineer of the Isthmian Canal Commission, has consented to act as honorary president of the Congress and is expected to preside in person over its general sessions. The names of the vice-presidents will be announced in the near future.

The Congress will hold its sessions during the week, September 20-25, 1915, in San Francisco, in the auditorium and section rooms which will be placed at its disposal by the management of the Panama-Pacific International Exposition Company.

Two distinct, though perhaps equally important, purposes of the Congress should be here emphasized. These are:

First.—The gathering together of a large and representative body of engineers from all civilized countries, with the opportunities which this will present of forming or renewing personal acquaintances, and of interchanging views on the various phases of professional work.

Second.—The reading and discussion of papers before the various sections, and their later publication in such form as to constitute a valuable addition to any engineering library.

In scope and character, it is intended that the Congress shall be truly international, and that it shall embrace, in a thorough and comprehensive manner, the various branches of the engineering profession. Eminent engineers throughout the world will be invited to contribute papers on assigned topics, and in the selection and distribution of these topics the committee will use its best endeavors to render the series of resulting papers widely representative of the world's best engineering practic in the various branches of the profession.

The following is a general indication of the sections and the branches of engineering which each will cover:

Section (1) The Panama Canal.
Section (2) Waterways and Irrigation.
Section (3) Railways
Section (4) Municipal Engineering.
Section (5) Materials of Engineering Construction.
Section (6) Mechanical Engineering.
Section (7) Electrical Engineering.
Section (8) Mining Engineering and Metallurgy.
Section (9) Naval Architecture and Marine Engineering.
Section (10) Military Engineering.
Section (11) Miscellaneous.

The official language of the Congress will be English, and all proceedings and transactions will be published in this language. The papers solicited will be welcomed in any language at the choice of the author; if presented in languages other than English they will be translated, and, together with all papers presented in English, will be printed in this language for presentation at the sessions of the Congress.

A special effort will be made to procure discussions, carefully prepared in advance, for presentation with the papers. In addition, opportunity will be afforded for oral discussions at the various sessions of the Congress. It is anticipated that limitations of space may require the ultimate publication of all discussions in condensed or summary form. Written discussions will be welcomed in any language at the choice of the writer, and if in other than English will be translated for publication. It is expected that oral discussions will be limited to the English language.

The general fee for membership in the Congress will be $5.00 U. S. Gold, which will entitle the member to receive the index volume and any single column of the transactions he may select, together with the right of participation in all the general activities and privileges of the Congress.

At a later time more detailed information will be furnished regarding the papers to be published in each volume of the transactions, together with a form for further subscription to such volumes as the members may desire. The price of these volumes will not exceed $3.50 for each single volume, which will include delivery within the Postal Union, and if the total aggregate of subscriptions shall prove sufficient the price will be reduced accordingly. In any case, a reduction will be made in the price per volume in accordance with the number ordered, and a sliding scale of prices will be determined after a more detailed development of the general plan of publication has been worked out.

Annual Meeting of General Managers' Association of Texas.

At the annual meeting of the General Managers' Association of Texas, held at Dallas on December 4th, the president of the Association, J. H. Hall, dwelt at some length in his report upon the relations between the public and the railways, and what the General Managers' Association of that state had done to cement those of a more friendly character. He spoke in part as follows:

"To my mind the greatest asset the Association has to its credit is the success which has followed its endeavors '*to bring about the better understanding and a more friendly feeling between the railroads and the people.*'

"It has in a dignified and business-like manner, by personal efforts of its members, and through the medium of the press (the latter misunderstood at first by a few, but now understood by nearly all) sought to place before the public such statements and facts—in most every instance based on the reports of the Railroad Commission——as would enable the people to fully inform themselves, and understand the true relation between them and the railroads.

"This policy has been followed for two reasons. The first and main one is that the people pay all the expenses, damages, taxes, etc., pertaining to the operation of the railroads, and are therefore entitled, as a matter of right, to know what these expenses are and how they affect them, in order that they, the people, may, in the exercise of their just and legal rights, have an opportunity to oppose the creation of additional and unnecessary expenses which the public would have to pay. Second, because a very small and insignificant percentage of the people of this country have, in the past, for their own personal gain and advancement sought to engender feelings of prejudice and ill-will toward the railroads by resorting to abuse and misrepresentation. Such misrepresentations, though in many insaances ridiculous, when not denied or refuted, have been accepted by many honest and fair-minded people as true.

"This policy of taking the public into our confidence and treating it as it deserves to be treated has occasioned some expense, but for every dollar so expended, hundreds of dollars have been saved in expenses which would have been saddled upon the people but for such efforts. The people, therefore, have been benefited.

"Hundreds of letters received and the expressions in the editorials of a fearless press are convincing that our present practice of dealing openly and fairly with the people meets with their hearty approval. In fact, but two adverse criticisms appeared in the press throughout the entire state, both of which were promptly and effectively answered. It can be truthfully said that the great and overwhelming majority of the people of Texas desire to be fair to the railroads and will be if honestly informed.

"At the present time it is the policy of the Association to continue to give public expression, when considered necessary, to any and all questions upon which the joint welfare of the people and the railroads depend, inviting honest inquiry and criticism, and at no time to base statements upon statistical figures that cannot be proven by the public records of the Railroad Commission and other public officers of the state.

"That the sentiment of the people of the state toward the railroads has changed decidedly for the better, due in no small degree to the fair and honest expressions of the press and the information given to the people through the channels of publicity referred to above, is patent to all, and a continuance of such policy is to my mind not only proper but desired by the public."

Annual Meeting of the Traffic Club of New York.—The Traffic Club of New York held its annual business meeting and dinner, November 25th, at the Aldine Club. A. F. Mack, freight agent of the United States Steel Products Export Company, the retiring president of the club, told of the large increase in the membership and commented upon the work done during the past year. Mayor-elect J. P. Mitchell was one of a number of new members admitted into the club.

Among the speakers were Burns Durbin Caldwell, president of Wells, Fargo & Co.; R. H. Wallace, general passenger agent of the Erie Railroad; W. J. L. Banham, traffic manager of the Otis Elevator Company; George A. Cullen, of the Delaware, Lackawanna & Western Railroad; Charles A. Swope, of the Louisville & Nashville Railroad; Edward Ritter, president of the Merchants' & Manufacturers' Exchange of New York, and John Pennington, of the New York Central Railroad.

Mr. Wallace, the new president of the club, made an address in which he gave statistics of New York's transportation.

Following are the officers elected for the ensuing year:

President—R. H. Wallace, general passenger agent of the Erie Railroad Co.

Vice-Presidents—W. J. L. Banham, traffic manager of the Otis Elevator Co.; W. W. Hall, general agent of the C. M. & St. P. Railway; J. T. Rogers, traffic manager of the Edison Cos.; W. H. Snell, general agent, passenger department, of the Canadian Pacific Railway, and A. J. Zock, freight agent of the Hamburg-American Line.

Treasurer—Frank C. Earle, 291 Broadway.

Secretary—C. A. Swope, Eastern freight agent of the Louisville & Nashville Railroad Company.

For Board of Governors (three years)—J. L. Carling, traffic manager of Arbuckle Brothers; W. J. Love, assistant to the manager of the International Mercantile Marine Co., and W. H. DeWitt, Jr., Eastern traffic manager of the Western Electric Co.

STATE COMMISSIONS.

Missouri.—Application has been made to the Missouri Public Service Commission by the Chicago, Milwaukee & St. Paul Railroad for permission to issue $470,000,000 in refunding bonds.

The issue is to cover all stock issues, franchises and equipment of the 10,000 miles of the Milwaukee system and will take up its entire indebtedness.

The bonds are to bear interest not to exceed six per cent and will run until the year 2014.

Massachusetts.—An order has been issued by the Public Service Commission refusing to revoke or suspend the previous order calling for interlocking signal apparatus at South Lawrence which the road has now found will cost $153,000.

The Boston & Maine claimed that the recent wreck at this point was not due to defects in the signal system. The Commission says it wants its order filled not only at South Lawrence, but throughout the State, which means, that the railroad must spend $373,873 before July 1, 1914.

New Jersey.—At a hearing before the State Board of Public Utility Commissioners, on an order to compel the Erie Railroad to abolish grade crossings in Paterson, N. J., the company submitted statements showing that the total cost of abolishing all the grade crossings on the Erie Railroad would amount to $134,000,000.

Duane E. Minard, representing the Erie Railroad, showed that in 1913, the Erie Railroad, after deduction of operating expenses and fixed charges had only $5,000,000 left in the treasury out of which to abolish grade crossings, make other improvements and pay dividends, if any. He introduced exhibits covering a ten-year period which showed that in the year ended June 30, 1913, the company earned only 1.13 per cent on its property investment of $453,045,352.

Another statement filed by the Erie shows that the company spent $24,685,361 for equipment, new construction and improvements in 1913 of which $500,000 was for elimination of grade crossings in New York and other large amounts were spent for safety appliances and devices required by law.

New York.—The Baltimore & Ohio Railroad Co. has been authorized by the Public Service Commission to acquire seventeen outstanding shares of the capital stock of the Staten Island Rapid Transit Railway Co.

The Public Service Commission has ordered the Long Island Railroad Company to install forthwith and to maintain and operate an adequate, manually operated, electrically controlled, block-signal system on its Whitestone Branch.

This order is the outcome of an investigation held by the Commission, following a head-on collision on September 22nd, between two trains on the Whitestone Division, about 550 feet east of the College Point Station.

The new system is a signal combination of electrical and manual control, so designed that the tower man can throw the signals open by manual movement, but they are closed automatically either by the operation of another signal or by the passage of a train into the single track stretch. The new signal was approved by the electrical engineer of the Commission.

The Public Service Commission has approved the New York Central's mortgages. The opinion was prepared by Chairman Martin S. Decker. In approving the mortgages, the Commission says that its determination is limited distinctly to such approval, and that such approval does not in any wise commit the Commission to the approval in advance of the consolidation of the Lake Shore, the Pittsburgh and Lake Erie, the Michigan Central or other properties with the New York Central, or to the exchange of the present 3½ per cent collateral bonds for four per cent bonds, except in cases of such consolidation.

The Public Service Commission has issued an order requiring the New York Central & Hudson River Railroad Company to reduce the one-way fares between the Grand Central Station and various points on the Harlem Division from 25 per cent to 33 per cent and on the Hudson River Division about 30 per cent.

The Public Service Commission has ordered the Long Island Railroad Company to discontinue the operation of twenty-four wooden cars on any of its passenger trains made up in part of steel cars, and has forbidden the use of any wooden cars for the transportation of passengers on any electrically driven trains, except when necessary to maintain schedules.

The order also provides that after September 15, 1914, the company shall not operate any wooden cars at all for the transportation of passengers in electrically driven trains.

Pennsylvania.—Figures compiled by the State Public Service Commission, based upon reports from the railroad companies, show that 4,355 steel passenger cars are in service on the 82 railroads of Pennsylvania. There are 11,889 passenger cars of all kinds in service, of which 7,163 are of wood construction, 1,271 wood with steel underframes and the rest all steel. In the list are 1,365 Pullman cars, of which 1,018 are steel, 62 wood with steel under-frames and the rest all wood. The report is the first of its kind compiled by the Commission. There are 128 railroads in the State, but only the 82 carry passengers, the rest being industrial roads. The Pennsylvania system has the largest number of passenger cars of all kinds and the largest number of steel coaches and Pullmans in service on its lines.

The Central Railroad Company of New Jersey has informed the Public Service Commission that it is not violating the full crew law, as charged by President Lee, of the Brotherhood of Railroad Trainmen. Observing the law, the company says, has resulted in added cost of more than $9,000 a month on account of the extra brakemen made necessary.

Texas.—The Railroad Commission has granted the milling-in-transit privilege asked for by large rice milling interests in South Texas.

Upon the advice of Attorney-General Looney that the suit against the Southern Pacific for refusing to apply to Victoria the rates based through Port Lavaca and the water competition could not be successfully prosecuted, Chairman Allison Mayfield, of the Railroad Commission, has notified the Attorney-General's department of the Commission's intention to dismiss the case. The rate from Galveston to Victoria, based on Port Lavaca charges, make a less combination than the standard mileage rates quoted all rail from Galveston to Victoria. There is nothing to prevent shippers from consigning freight to Lavaca on the water combination rate and then reconsigning shipments to Victoria on the usual locals, which would give the low combination.

LEGISLATION.

Probable Trust Legislation.—The scope of President Wilson's program of anti-trust legislation has become fairly well defined and it is understood that the measures to be advanced at these sessions will aim at the following results:

Definition of the various forms of monopoly and restraint of trade which would be "conclusively deemed" unreasonable and in violation of law.

Placing upon the defendant the burden of proof to show that there is no "unreasonable" restraint of trade.

Prohibition of interlocking directorates between large corporations.

Establishment of an Interstate Trade Commission, to exercise regulatory powers, make original investigations and aid the courts in carrying out decrees of dissolution of trusts.

It is stated that one of the chief aims of legislation of this character will be to clear up what is now termed the "twilight zone" of corporative activities.

LABOR.

Railroad Employes Petition Commission for Rate Advance.—Employes of the Baltimore and Ohio Railroad at Newark, Ohio, are circulating a petition to the Interstate Commerce Commission, asking that the application of the eastern railroads for an increase in freight rates be granted. The petition is being circulated in business circles, shippers, merchants, jobbers, buyers, public officials, professional men and others, showing a willingness to sign it. Several hundred names have been affixed to the document.

The petition is being circulated on the initiative of the railroad men themselves and has the endorsement of all classes of employes.

The communication to the Interstate Commerce Commission sets forth that the application of the railroads is believed to be wholly within reason, in view of the concessions made during recent years to employes, the higher cost of material and supplies and other items of expense having to be met. It also points out that both freight and passenger rates have been raised on foreign roads while during the same period in this country many of the rates have been reduced.

"The undersigned urgently solicit your favorable consideration of the request for an increase in freight rates," reads the petition, "in order that railroad facilities may be developed to meet the demands of constantly increasing traffic."

LAND AND INDUSTRIAL.

Frisco Inaugurates Campaign for Better Farm Marketing.—In a circular effective December 1st, Frank Anderson, Director of Development of the Frisco Lines, announces the appointment of E. C. Hoag as Supervisor Farm Marketing, in charge of the marketing branch of the Department of Development. Mr. Hoag was formerly Division Freight Agent of the Frisco Lines at Joplin, Missouri.

W. B. Biddle, Receiver and Chief Traffic Officer of the Frisco had the following to say in connection with the appointment:

"We expect farm marketing to be one of the important features of the work of the Department of Development. We do not expect to revolutionize the present system of marketing in a day, but investigations covering a period of more than a year convince us that a decided improvement can be made in the interest of both producer and buyer.

"A great many markets heretofore unsupplied or insufficiently supplied will consume a great share of the products for which the farmers along our lines have not so far been able to find a market. We have also satisfied ourselves that along our own rails markets for a great share of the products produced by the farmers in our territory can be found.

"There should be a larger interchange of business betwen various sections along our lines. Bringing this about will result in improved markets for our producers.

"Our plans as now being worked out do not contemplate interference with any one. On the other hand we believe the railroad is equipped in such manner as to bring together the parties in interest in such a manner that all will profit.

"The bankers' organizations recently formed along our lines can be an important factor in working out the marketing problem.

"One of the evils which has resulted in great loss to the producers has been improper grading and packing. The Department of Development has given its attention for the greater part of the past year to the formation of such grading and packing organizations as would establish a standard for the various products. This we believe will not only enable the producers to better and more profitably sell their output, but will assure the buyers of a standard that they can rely upon.

"We are inviting the co-operation of both producers and buyers in working out the problem."

CONSTRUCTION.

Railway Construction in Canada.—During the year 1913 the railways of Canada have had in hand, in one State or another, fully 6,000 miles of new construction. By June 30th last, when the year for railway statistics closes, between 1,800 and 2,000 miles had been taken into operation as finally completed, and since that date there has been immense activity. Including lines which have been surveyed, lines for which the contracts have been let, and lines for which the contracts have been completed, the total will run to the extraordinary figure quoted. At present the Canadian Pacific has well over 1,000 miles in hand, the Canadian Northern not far short of 2,000 and the Grand Trunk Pacific about 1,000, while there also is to be considered the 500 miles of the Hudson Bay Railway, and the National Transcontinental, which is now nearing its completion. The present activity in construction work constitutes a record.

BOOK REVIEWS.

Railway Problems. Revised Edition. Edited by William Z. Ripley, Professor of Economics in Harvard University. Published by Ginn and Company. Price, $2.50.—The present revision of "Railway Problems" is made along the same lines that distinguished the original edition. While primarily intended to serve as a text-book for college classes in the economics of transportation, the book aims also to offer, in convenient form for the general reader and student of American public questions, authoritative information upon this important economic and political question.

The book naturally divides itself into four parts:

The FIRST, or historical section, affords a back-ground for comparison and contrast with present conditions.

The SECOND section deals with the traffic problems before the Interstate Commerce Commission, and gives some insight into the origin and development of railway rates and tariffs.

The THIRD section deals specifically with the present problem of governmental regulation in the United States. An expert description of the new Hepburn Act is followed by a discussion of the relation of the Interstate Commerce Commission to the courts.

The FOURTH section presents descriptions by competent authorities of the present status of the railway problem in Great Britain, Germany, and France.

FOREIGN ROADS.

Costa Rican Railroads.—A comprehensive discussion of the railroads of Costa Rica, by M. Desire Pector, French Consul-General in Honduras, appears in the October number of the "Revue Economique Internationale." It seems that Costa Rica was the second Central American country to have a trans-continental railway. The distance by rail across the continent here is 208 miles, part of which is covered by the Ferrocarril el Pacifico (Pacific Railroad) and part by the Ferrocarril de Costa Rica (Costa Rica Railroad). These two roads and the Ferrocarril del Norte (Northern Railroad) constitute the three systems of the country, the total mileage of which amounts to 404 miles. The Pacific Railroad has 68 miles; the Costa Rica Railroad, 206 miles; and the Northern Railroad, 130 miles. The last two systems are under the management of the United Fruit Company, and a considerable part of the traffic consists of bananas.

Traffic returns for two divisions of the Pacific Railroad give an average of 2.89 cents per passenger-mile for 1910 and 3.03 cents per passenger-mile for 1911; while the average for freight receipts in 1910 was 0.836 of one cent per ton-mile.

On the Costa Rica Railroad the first-class passenger fare from Limon to San Jose, a distance of 103 miles, was $3.84; and a second-class ticket cost $3.04. The maximum weight of baggage carried free on one ticket was 44 pounds (20 kilograms).

The line across Costa Rica is about as long as the Tehuantepec route through Mexico, but crosses the mountains at an elevation of over 5,000 feet, whereas the highest elevation on the Tehuantepec route is 883 feet. However, the picturesque mountain scenery in Costa Rica is an attraction for tourist traffic, which in a measure tends to offset the disadvantages due to high grades.

ELECTIONS AND APPOINTMENTS.

Executive.

F. A. Delano, president, Chicago, Indianapolis & Louisville R. R.

L. C. Gilman, president, Hill Lines in the West. Headquarters, Portland, Oregon.

E. A. Goeldner, assistant to vice-president, and general manager, Southern Kansas Railway Co., of Texas and the Pecos & Northern Texas Ry. Headquarters, Amarillo, Texas.

Charles C. Harrison, director, the Reading Company and the Philadelphia and Reading Railway.

W. C. Hurst, vice-president and general manager, Chicago, Peoria and Eastern Railway.

Edward M. Hyzer, vice-president and general counsel, Chicago & Northwestern and the Chicago, St. Paul, Minneapolis and Omaha. Headquarters, Chicago, Ill.

J. R. Kenly, president, Atlantic Coast Line Railroad Company. Headquarters, Remington, N. C.

Oscar Lawler, director, San Pedro, Los Angeles and Salt Lake R. R. Headquarters, Los Angeles, Cal.

James W. Lusk, receiver, St. Louis & San Francisco Ry.

W. F. Owen, president, New Orleans, Mobile and Chicago R. R. Headquarters, Mobile, Ala.

Charles E. Perkins, director, Chicago, Burlington & Quincy R. R.

John H. Peyton, president, Nashville, Chattanooga and St. Louis Ry.

W. A. Rambach, assistant to vice-president, Gould Lines. Headquarters, Chicago, Ill.

J. C. Stewart, assistant to the president, Erie Railroad.

John G. Sutton, vice-president and general manager, Ocean Shore Railroad. Headquarters, San Francisco, Cal.

H. V. P. Taylor, president, St. Louis Association of General Passenger Agents.

G. F. Turley, vice-president and general manager, Virginia-Carolina and the New River, Holsten and Western R. R.

Legal.

John C. Bill, assistant general solicitor, Pere Marquette R. R. Headquarters, Detroit, Mich.

Parker, Shields & Brown, general attorneys, Pere Marquette R. R. Headquarters, Detroit, Mich.

Financial.

J. A. Harvel, secretary, St. Louis Association of General Passenger Agents.

Accounting.

L. A. Lambert, auditor, miscellaneous receipts and accounts, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

Horace R. McCormick, auditor of disbursements, Philadelphia and Reading Railway. Headquarters, Philadelphia, Pa.

T. D. Simmons, acting car accountant, Georgia and Florida R. R. Headquarters, Augusta, Ga.

F. C. Uhlman, general auditor, Western Maryland Railway. Headquarters, Baltimore, Md.

Engineering and Mechanical.

Webb C. Ball, general time inspector, New York, New Haven & Hartford and the Central New England. Headquarters, New Haven, Conn.

F. E. Bates, chief draughtsman, bridge department, Missouri Pacific Railway. Headquarters, St. Louis, Mo.

F. T. Beckett, engineer, maintenance of way, Chicago, Rock Island and Pacific Railway. Headquarters, El Reno, Okla.

F. L. Burckhalter, chief engineer, Portland, Eugene & Eastern Ry. Headquarters, Portland, Oregon.

C. F. Burrell, engineer and roadmaster, Kentucky and Indiana Terminal. Headquarters, Louisville, Ky.

A. M. Burt, chief engineer, maintenance of way, Northern Pacific. Headquarters, St. Paul, Minn.

Robert F. Byers, master mechanic, Central Dominicano Railroad. Headquarters, Porto Plata, Dominican Republic.

W. J. Calvin, roadmaster, Northern Pacific Ry. Headquarters, Sedro Wooley, Wash.

H. R. Clark, roadmaster, Chicago, Burlington & Quincy R. R. Headquarters, Burlington, Iowa.

G. C. Cleaver, engineer maintenance of way, Buffalo, Rochester and Pittsburgh Ry. Headquarters, DuBois, Pa.

J. C. Clendenen, road foreman of engines, Norfolk and Western Ry. Headquarters, Portsmouth, Ohio.

R. Collett, superintendent of locomotive performances, St. Thomas & San Francisco Railroad.

John S. Cooper, car foreman, Rock Island Lines. Headquarters, Hulbert, Ark.

J. F. Deimling, assistant chief engineer, Michigan Central. Headquarters, Detroit, Mich.

C. C. Elmes, road foreman of engines, Shamokin Division, Philadelphia and Reading Railway.

G. Clinton Gardner, Jr., assistant engineer of motive power, Northern Division, Pennsylvania Railroad. Headquarters, Buffalo, New York.

F. W. Gilcreast, engineer maintenance of way, Lehigh and New England R. R. Headquarters, South Bethlehem, Pa.

Paul L. Grove, master mechanic, Pennsylvania Railroad. Headquarters, Sunbury, Pa.

E. W. Hammond, division engineer, Buffalo, Rochester and Pittsburgh Railway. Headquarters, DuBois, Pa.

W. C. Hattan, division engineer, Elkhorn extension, Carolina, Clinchfield & Ohio Railway. Headquarters, Dante, Va.

C. C. Hill, engineer of construction, Michigan Central Ry. Headquarters, Detroit, Mich.

E. M. Keough, roadmaster and assistant trainmaster, Streator Branches, Chicago, Burlington & Quincy Ry. Headquarters, Aurora, Ill.

Frank McManamy, chief of division of locomotive boiler inspection of the Interstate Commerce Commission.

T. S. Mahoney, superintendent of terminals, Texas and Pacific Ry. Headquarters, New Orleans, La.

F. B. Marble, division engineer, Michigan Central Railway. Headquarters, Niles, Mich.

Melvin S. Montgomery, road foreman of engines, Northern Pacific Ry. Headquarters, Duluth, Minn.

George Murphy, roadmaster, Savanna Lines, Chicago, Burlington & Quincy Railroad. Headquarters, Rochelle, Ill.

C. A. Paquette, chief engineer, maintenance of way, Cleveland, Cincinnati, Chicago & St. Louis Ry. and the Peoria and Eastern Ry. Headquarters, Cincinnati, Ohio.

R. W. Prichard, assistant superintendent, car department, Terminal Division, Rock Island Lines. Headquarters, Chicago, Ill.

J. P. Reynolds, division engineer, Erie Division, Buffalo, Rochester & Pittsburgh Ry. Headquarters, Rochester, N. Y.

J. W. Sasser, superintendent of motive power, Norfolk Southern R. R. Headquarters, Norfolk, Va.

Philip Stohlberger, road foreman of engines, Atlantic City R. R.

Elliott Sumner, master mechanic, Pennsylvania Railroad. Headquarters, Philadelphia, Pa.

R. C. Violett, roadmaster, Chicago, Burlington & Quincy Ry. Headquarters, Aurora, Ill.

E. B. Weatherby, engineer, maintenance of way, Kansas City Terminal Railway. Headquarters, Kansas City, Mo.

William V. Wicks, road foreman of engines, Northern Pacific Ry. Headquarters, Jamestown, N. Dak.

P. O. Wood, assistant superintendent locomotive performance, St. Louis and San Francisco R. R. Headquarters, Springfield, Ill.

Operation.

E. R. Allen, assistant superintendent of terminals, Erie Railroad. Headquarters, Jersey City, N. J.

J. F. Alsip, trainmaster, Tacoma Division, Northern Pacific. Headquarters, Tacoma, Wash.

W. A. Baldwin, assistant general superintendent, Erie Grand Division, Erie Railroad. Headquarters, New York City.

Charles W. Brown, assistant superintendent, Lehigh and New England R. R. Headquarters, South Bethlehem, Pa.

E. N. Brown, trainmaster, Baltimore and Ohio Southwestern R. R. Headquarters, Chillicothe, Ohio.

B. C. Byers, division superintendent, Cleveland, Cincinnati, Chicago & St. Louis Ry. Headquarters, Mt. Carmel, Ill.

W. J. Calvin, roadmaster, Northern Pacific Railway. Headquarters, Sedro Wooley, Wash.

G. S. Cameron, trainmaster, Baltimore and Ohio Southwestern. Headquarters, Seymour, Ind.

E. E. Carter, assistant superintendent, Kansas Division, St. Louis and San Francisco R. R.

William H. Carter, trainmaster, Cincinnati Division, Cleveland, Cincinnati, Chicago & St. Louis Railway. Headquarters, Springfield, Ohio.

C. O. Claiborne, assistant superintendent, Western Division, St. Louis and San Francisco R. R.

C. M. Clark, assistant superintendent, Eastern Division, St. Louis and San Francisco R. R.

William H. Corbett, trainmaster, Minnesota Division, Minneapolis, St. Paul & Sault Ste. Marie Ry. Headquarters, Harvey, N. D.

T. E. Coyle, superintendent, Pasco Division, Northern Pacific Ry. Headquarters, Pasco, Wash.

Bert Crumler, assistant trainmaster, Norfolk & Western. Headquarters, Williamson, W. Va.

J. J. Cummins, assistant superintendent, Northern Division, St. Louis and San Francisco Railroad.

J. L. DeForce, superintendent, Idaho Division, Northern Pacific Railway. Headquarters, Spokane, Wash.

J. B. Dickson, assistant general manager, Ohio Grand Division, the Erie Railroad. Headquarters, Cleveland, Ohio.

H. O. Dunkle, general manager, Chicago Division, Erie Railroad. Headquarters, Chicago, Ill.

C. P. Eckels, superintendent, Delaware Division, Erie Railroad. Headquarters, Susquehanna, Pa.

E. A. Goeldner, assistant to the general manager, Western Lines, Atchison, Topeka and Santa Fe Railway. Headquarters, Amarillo, Texas.

C. H. Hensley, assistant superintendent, Ozark Division, St. Louis & San Francisco Railroad.

C. A. Irvin, assistant superintendent, Red River Division, St. Louis and San Francisco Railroad.

M. E. Johns, superintendent of terminals, New York, Susquehanna and Western Railroad. Headquarters, Jersey City, N. J.

Charles W. Jones, general manager, First District, Chicago, Rock Island and Pacific Railway. Headquarters, Des Moines, Iowa.

E. M. Kelly, trainmaster, Sandusky Division, Cleveland, Cincinnati, Chicago and St. Louis Ry. Headquarters, Bellefontaine, Ohio.

C. F. Kirchner, assistant superintendent, Southeastern Division, St. Louis & San Francisco Railway. Headquarters, Birmingham, Ala.

W. J. Kleck, trainmaster, Texas and Pacific Ry. Headquarters, New Orleans, La.

F. B. Lincoln, general superintendent, Erie Grand Division, Erie Railroad. Headquarters, New York City.

T. S. Mahoney, superintendent of terminals, Texas and Pacific Ry. Headquarters, New Orleans, La.

C. D. Martin, general manager in charge of Eastern Lines, United States Express Company.

J. J. Mantell, superintendent, Wyoming Division, Erie Railroad. Headquarters, Dunmore, Pa.

M. R. Moran, assistant superintendent, River and Cape Division, St. Louis and San Francisco Railroad.

J. A. Morris, superintendent of terminals, Cleveland, Cincinnati, Chicago & St. Louis. Headquarters, Springfield, Ohio.

R. S. Parsons, general manager, Ohio Division, the Erie Railroad. Headquarters, Cleveland, Ohio.

David F. Peters, trainmaster, Scioto Division, Norfolk and Western Railroad. Headquarters, Portsmouth, Ohio.

P. H. Phinney, assistant superintendent, Central Division, St. Louis and San Francisco Railroad.

Albert J. Stone, general manager, Erie Division, Erie R. R.

B. F. Van Vliet, superintendent, Iowa & Dakota Division, Chicago, Milwaukee & St. Paul Railway. Headquarters, Mason City, Iowa.

H. S. Walker, assistant trainmaster, Norfolk & Western Railway. Headquarters, Eckman, W. Va.

A. G. Whittington, acting general manager, International & Great Northern. Headquarters, San Antonio, Texas.

E. H. Zeigler, superintendent, Peoria and Eastern Division, Cleveland, Cincinnati, Chicago & St. Louis Ry. Headquarters, Indianapolis, Ind.

Traffic.

W. H. Alexander, assistant general freight agent, Missouri Pacific-Iron Mountain Railway.

F. D. Armstrong, commercial agent, St. Louis & San Francisco R. R. and the Chicago and Eastern Illinois R. R. Headquarters, New Orleans, La.

J. W. Allen, general agent, freight department, Missouri, Kansas and Texas Ry. Headquarters, St. Louis, Mo.

F. C. Baird, freight traffic manager, Bessemer and Lake Erie R. R. Headquarters, Pittsburgh, Pa.

H. L. Baird, assistant general freight agent, Bessemer and Lake Erie R. R. Headquarters, Pittsburgh, Pa.

J. L. Baker, soliciting freight agent, Southern Railway. Headquarters, Jacksonville, Fla.

E. W. Batchelder, general agent, Erie Railroad. Headquarters, Jamestown, N. Y.

Elias Bernstein, night ticket agent, Baltimore and Ohio R. R. Headquarters, New York City.

J. E. Boggs, city passenger and ticket agent, Chicago Great Western R. R. Headquarters, St. Paul, Minn.

C. P. Bowsher, commercial agent, Missouri, Kansas and Texas Ry. Headquarters, Louisville, Ky.

W. G. Brooks, soliciting freight agent, Georgia Southern & Florida. Headquarters, Jacksonville, Fla.

H. S. Brown, soliciting freight agent, Baltimore and Ohio R. R.

C. L. Bullard, commercial agent, Delaware, Lackawanna and Western R. R. Headquarters, Utica, N. Y.

W. S. Burton, chief clerk, general freight agent, Western Maryland Railroad.

Harry C. Bush, member, Western Classification Committee. Headquarters, Chicago, Illinois.

W. E. Chambers, assistant general freight agent, Louisville, Henderson and St. Louis Ry. Headquarters, Louisville, Ky.

J. T. Conley, general freight agent, the St. Paul System. Headquarters, Chicago, Ill.

U. G. Couffer, freight claim agent, Pittsburgh, Cincinnati, Chicago, & St. Louis. Headquarters, Pittsburgh, Pa.

W. S. Crowl, general agent, Michigan Central R. R. Headquarters, Detroit, Mich.

M. P. Davis, traveling freight agent, Louisville & Nashville. Headquarters, Jacksonville, Fla.

James D. Dawson, contracting freight agent, Seaboard Air Line. Headquarters, Baltimore, Md.

T. W. Dudley, general agent, Kansas City Southern Railway. Headquarters, Seattle, Wash.

Lee A. Dwelle, traveling freight agent, Louisville & Nashville Railroad. Headquarters, Tampa, Fla.

E. L. Duncan, manager, mail traffic, Chicago & Eastern Illinois Railroad. Headquarters, Chicago, Ill.

W. H. Emerson, freight claim agent, Chicago and Eastern Illinois. Headquarters, Chicago, Ill.

Albert J. Fox, assistant general freight agent, Seaboard Air Line. Headquarters, Jacksonville, Fla.

Eugene Fox, assistant general traffic manager, El Paso Southwestern. Headquarters, Chicago, Ill.

Walter S. Franklin, Jr., southern freight agent, Pennsylvania system. Headquarters, Atlanta, Ga.

R. C. Fyfe, chairman, Western Classification Committee. Headquarters, Chicago, Ill.

L. C. Gaty, general freight and passenger agent, Jonesboro, Lake City & Eastern Railway.

J. L. Greenwood, traveling freight agent, Southern Railway. Headquarters, Charleston, S. C.

J. B. Gibson, traveling freight agent, Kansas City Southern. Headquarters, Houston, Texas.

E. E. Harrison, Jr., commercial agent, Southern Railway. Headquarters, Charleston, S. C.

William Henderson, traveling freight agent, Hawkinsville & Florida Southern. Headquarters, Camilla, Ga.

J. P. Harris, assistant general freight agent, St. Louis, Iron Mountain and Southern Railway.

M. C. Hill, supervisor of passenger fare collections, Frisco Lines.

A. M. Hunter, station passenger agent, Missouri, Kansas and Texas. Headquarters, St. Louis, Mo.

S. F. Hilton, agent, freight department, Union Pacific Ry. Headquarters, Fresno, Cal.

Roger P. Hurley, general agent, traffic department, Toledo, St. Louis and Western R. R. Headquarters, Detroit, Mich.

E. C. Hoag, supervisor, farm-marketing, St. Louis and San Francisco R. R. Headquarters, Joplin, Mo.

J. J. MacEwen, traveling freight agent, Western Maryland Railway. Headquarters, Columbus, Ohio.

W. W. Miller, general freight agent, Missouri, Kansas and Texas. Headquarters, St. Louis, Mo.

F. E. Mitchell, commercial agent, Kansas City, Mexico and Orient Railway. Headquarters, Ft. Worth, Texas.

J. L. Moore, general agent, passenger department, Northern Pacific Ry. Headquarters, Kansas City, Mo.

Charles H. Morrill, assistant general freight agent, the Frisco Lines. Headquarters, St. Louis, Mo.

T. D. Mullally, commercial agent, Southern Railway. Headquarters, Jacksonville, Fla.

C. Emil Muller, general agent, Seaboard Air Line. Headquarters, Baltimore, Md.

H. E. Murphy, traveling passenger agent, Cincinnati, New Orleans and Texas Pacific Railway and the Alabama Great Southern R. R. Headquarters, Chattanooga, Tenn.

E. S. Neilson, freight solicitor, Pennsylvania Railroad. Headquarters, Harrisburg, Pa.

A. G. Norris, division freight agent, Sunset Central Lines of the Southern Pacific Co. Headquarters, Galveston, Texas.

Charles G. Norris, soliciting freight agent, Georgia Southern & Florida Ry. Headquarters, Macon, Ga.

P. B. Norton, agent, passenger department, Union Pacific. Headquarters, Fresno, Cal.

W. R. O'Hara, district freight solicitor, Pennsylvania system. Headquarters, Jacksonville, Fla.

Frank E. Otis, assistant general freight agent, the St. Paul System. Headquarters, Chicago, Ill.

John G. Parnell, traveling freight solicitor, Pennsylvania System. Headquarters, Atlanta, Ga.

H. H. Pierce, traveling passenger agent, Hocking Valley Railway. Headquarters, Columbus, Ohio.

T. H. Pointer, traveling freight and passenger agent, Sunset-Central Lines. Headquarters, Ft. Worth, Texas.

W. E. Prendergrast, member, Western Classification Committee. Headquarters, Chicago, Ill.

E. V. Rettino, agent, Lehigh Valley R. R. Headquarters, Pattenburg, N. J.

W. H. Rickey, soliciting freight agent, Philadelphia-New Orleans Transportation Company. Headquarters, Trenton, N. J.

G. L. Robinson, assistant general passenger agent, New York, Ontario & Western Railway. Headquarters, Grand Central Terminal, New York City.

William J. Ryan, traveling freight agent, Chicago Branch, New York Central Lines.

J. J. Scherp, city passenger and ticket agent, Great Northern. Headquarters, Spokane, Wash.

Robert Shaw, traveling passenger agent, Great Northern. Headquarters, Seattle, Wash.

A. G. Sheer, chief of the tariff bureau, St. Louis, Rocky Mountain & Pacific Ry. Headquarters, Chicago, Ill.

Edward W. Sievert, traveling freight agent, Chicago, Indiana & Southern Ry. Headquarters, Minneapolis, Minn.

A. E. Sinclair, traveling freight agent, International and Great Northern Ry., and the Texas and Pacific. Headquarters, San Francisco, Cal.

L. N. Simms, traveling passenger agent, Louisville and Nashville R. R. Headquarters, Birmingham, Ala.

George A. Smith, traveling passenger agent, Southern Pacific Company. Headquarters, Pittsburgh, Pa.

M. F. Smith, general agent, Kansas City Southern Ry. Headquarters, Los Angeles, Cal.

R. H. Smith, chief of tariff bureau, Pittsburgh, Cincinnati, Chicago & St. Louis Ry. Headquarters, Pittsburgh, Pa.

W. R. Smith, division freight agent, Sunset-Central Lines of the Southern Pacific Co. Headquarters, Austin, Texas.

John Steinriede, contracting freight agent, Chesapeake and Ohio Railroad. Headquarters, Cincinnati, Ohio.

J. B. Stewart, traffic manager, New York, Ontario & Western Ry. Headquarters, New York City.

H. E. Still, general western freight agent, Northern Pacific Ry. Headquarters, Tacoma, Wash.

Fred Sturdee, assistant district passenger agent, Canadian Pacific Ry. Headquarters, Toronto, Ont.

J. W. Styers, general freight agent, Bessemer and Lake Erie R. R. Headquarters, Pittsburgh, Pa.

F. R. Thomas, city passenger and ticket agent, Chicago Great Western Railroad. Headquarters, Minneapolis, Minn.

R. Alan Turner, district freight solicitor, Pennsylvania System. Headquarters, Charlotte, N. C.

Alex. Tinling, general freight agent, Northern Pacific R. R. Headquarters, Tacoma, Wash.

W. R. Trelford, northern passenger agent, International & Great Northern Ry. Headquarters, Chicago, Ill.

W. R. Tucker, farmers' co-operative agent, Atlanta, Birmingham and Atlantic R. R. Headquarters, Moultrie, Ga.

S. M. Wallace, commercial agent, St. Louis & San Francisco Ry. Headquarters, Dallas, Texas.

W. T. Westbrook, soliciting agent, Louisville & Nashville Ry. Headquarters, Birmingham, Ala.

H. H. Weston, agent, the Erie Railroad. Headquarters, Minneapolis, Minn.

W. H. Whorry, clerk, Pennsylvania Lines West.

D. U. Wilder, traveling passenger agent, Louisville and Nashville R. R. Headquarters, Jacksonville, Fla.

Alfred Wilkins, freight solicitor, Pennsylvania Railroad. Headquarters, Philadelphia, Pa.

F. M. Williams, division freight agent, Atchison, Topeka and Santa Fe. Headquarters, Trinidad, Col.

R. D. Williams, assistant general freight agent, Missouri, Kansas and Texas Ry. Headquarters, St. Louis, Mo.

E. M. Womack, assistant general passenger agent, Louisville, Henderson & St. Louis Ry. Headquarters, Louisville, Ky.

John T. Wray, district freight solicitor, Pennsylvania System. Headquarters, Atlanta, Ga.

E. E. Wright, assistant freight claim agent, Pittsburgh, Cincinnati, Chicago and St. Louis Ry. Headquarters, Pittsburgh, Pa.

Industrial.

James D. Greer, industrial agent, Sunset-Central Lines of the Southern Pacific. Headquarters, Houston, Texas.

R. G. Hanson, Jr., industrial agent, Missouri, Kansas and Texas Lines. Headquarters, St. Louis, Mo.

R. C. Miller, industrial agent, Lake Shore and Michigan Southern Railway, Pittsburgh, Lake Erie R. R., and the Lake Erie and Western R. R. Headquarters, Cleveland, Ohio.

H. J. Perkins, industrial agent, Michigan Central R. R. Headquarters, Detroit, Mich.

R. C. Weller, industrial agent, New York Central Lines. Headquarters, Cleveland, Ohio.

Purchasing.

E. A. Clifford, assistant general purchasing agent, Atchison, Topeka and Santa Fe Railway. Headquarters, Chicago, Ill.

F. E. Connors, assistant to vice-president in charge of stores, Atchison, Topeka and Santa Fe. Headquarters, Topeka, Kansas.

J. T. Lawson, assistant storekeeper, International and Great Northern Ry. Headquarters, San Antonio, Texas.

F. A. Murphy, traveling storekeeper, Baltimore and Ohio Ry. Headquarters, Baltimore, Md.

Miscellaneous.

Frank Boyd, assistant surgeon, Illinois Central hospital. Headquarters, Paducah, Ky.

Gordon Chambers, assistant real estate agent, Philadelphia and Reading Railway. Headquarters, Philadelphia.

J. E. Hundley, commissioner, transportation department, Utica Chamber of Commerce.

T. M. Jeffords, agricultural agent, Missouri, Kansas & Texas Ry. Headquarters, St. Louis, Mo.

Clinton L. Patterson, head of secret service department, Union Pacific Railroad.

Judson C. Clements, member, Interstate Commerce Commission.

John Q. Taylor, chief surgeon, Illinois Central Hospital. Headquarters, Paducah, Ky.

Safety.

E. R. Scoville, member, General Safety Committee, Baltimore & Ohio System. Headquarters, Baltimore, Md.

RESIGNATIONS.

Executive.

George W. Bellamy, chairman, Arkansas Railroad Commission.

W. B. Biddle, vice-president, St. Louis and San Francisco R. R.

W. K. Bixby, director, St. Louis and San Francisco R. R.

E. B. Boyd, assistant to vice-president in charge of traffic, Gould Lines.

Frederic A. Delano, receiver, Wabash Railroad.

Hon. Henry A. duPont, director, the Reading Company and the Philadelphia and Reading Railway.

Howard Elliott, director, Chicago, Burlington & Quincy R. R.

W. C. Nixon, president, St. Louis and San Francisco R. R.

John Sebastian, third vice-president, Chicago, Rock Island and Pacific Ry.

J. C. Stewart, vice-president, operating department, Erie Railroad.

Theodore N. Vail, director, Boston and Maine Railroad.

Thomas H. West, receiver, St. Louis and San Francisco R. R.

J. H. Young, president, Spokane, Portland & Seattle Ry.

Legal.

F. W. M. Cutcheon, general counsel, Western Pacific R. R.

Financial.

W. K. Allen, secretary and treasurer, Elgin, Joliet and Eastern R. R.

T. D. Heed, assistant secretary, St. Louis and San Francisco Railroad.

Accounting.

Robert Casson, general auditor, Western Maryland Ry.

J. S. Denham, acting car accountant, Georgia & Florida Ry.

J. B. Fick, auditor, Winfield & Gulf Railroad.

Joseph D. Greene, auditor of disbursements, Pennsylvania R. R.

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DIVIDEND NOTICE.

UNITED STATES RUBBER COMPANY.

1790 Broadway, New York, January 2nd, 1914.
The Board of Directors of the United States Rubber Company has this day declared from its net profits a quarterly dividend of Two per cent (2%) on the First Preferred Stock, a quarterly dividend of One and one half per cent (1½%) on the Second Preferred Stock, and a quarterly dividend of One and one-half per cent (1½%) on the Common Stock of the Company, to Stockholders of record at 3 P. M., on Thursday, January 15th, 1914, payable, without closing of the transfer books, January 31st, 1914.
W. G. PARSONS, Treasurer.

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Railway World

VOL. LVIII. FEBRUARY, 1914 No. 2

General Business Endorses the Proposed Increase in Freight Rates

THE RAILWAY WORLD has concluded an investigation, the results of which conclusively show an overwhelming sentiment among business men in favor of permitting the carriers in Official Classification territory to increase their freight rates five per cent. So important and significant have been the results obtained that the entire issue has been devoted to their presentation.

To procure this information, letters were addressed to the Mayors of cities of over 5,000 population in the territory involved, as well as to the secretaries of the more important commercial organizations *and it was definitely stated that all replies received, either of a favorable or unfavorable character, would be given the same impartial treatment and publicity.* The Mayors were requested to state their opinion as to the attitude of the business men of their community towards the rate increase, and the secretaries of the commercial organizations were asked to submit any resolutions passed in relation thereto, or, if no resolutions had been passed, to indicate if possible, the general sentiment of their members. Three hundred and eighty-five replies were received from both sources, covering, to a greater or less extent, the following states:

New York.
Pennsylvania.
Illinois.
Ohio.
Massachusetts.
Michigan.
Indiana.
New Jersey.
Wisconsin.
Maryland.
West Virginia.
Connecticut.
Maine.
Rhode Island.
New Hampshire.
Vermont.
District of Columbia.
Delaware.

In addition to the replies from the Mayors and Secretaries, six Governors of States answered the RAILWAY WORLD's communication. Governors Pothier of Rhode Island, Baldwin of Connecticut and Hatfield of West Virginia, reported the majority sentiment of the business men of their States to be in favor of the increase, while Governors Haines of Maine, Miller of Delaware and Ferris of Michigan, declined to answer the questions submitted on the basis of lack of sufficient information upon which to determine accurately what the prevailing sentiment of their States might be.

The following statement indicates the character of the replies received:

States. From Whom Received.	Favorable.	Unfavorable.	Uncertain.
New York—			
Mayors	11	4	4
Commercial Organizations	14	2	12
Pennsylvania—			
Mayors	24	13	3
Commercial Organizations	20	2	20
Illinois—			
Mayors	8	4	2
Commercial Organizations	18	1	18
Ohio—			
Mayors	6	5	2
Commercial Organizations	13	0	12
Massachusetts—			
Mayors	5	2	0
Commercial Organizations	8	1	12
Michigan—			
Mayors	11	4	4
Commercial Organizations	6	0	7
Indiana—			
Mayors	3	5	3
Commercial Organizations	7	2	12
New Jersey—			
Mayors	3	1	0
Commercial Organizations	3	0	9
Wisconsin—			
Mayors	1	0	2
Commercial Organizations	7	0	7
Maryland			
Mayors	1	0	0
Commercial Organizations	3	0	0
West Virginia—			
Mayors	5	0	1
Commercial Organizations	7	0	0
Connecticut—			
Mayors	4	2	0
Commercial Organizations	4	0	5
Maine—			
Mayors	1	0	0
Commercial Organizations	2	2	5
Rhode Island—			
Mayors	0	0	0
Commercial Organizations	2	0	3
New Hampshire—			
Mayors	5	0	0
Commercial Organizations	6	0	2
Vermont—			
Mayors	1	0	0
Commercial Organizations	2	0	2
District of Columbia—			
Commercial Organizations	1	1	0
Delaware—			
Commercial Organizations	0	0	1
Totals—			
Mayors	89	40	21
Commercial Organizations	123	11	127
Grand Totals	212	51	148

This statement, favorable as is its surface appearance, does not indicate the strength of the endorsement for the reason that those advocating the increase presented strong and conclusive arguments in favor of their attitude and represent, to a large extent, the more important communities, while those taking a negative position, belong more largely to the smaller communities, and, as a rule, were satisfied in voicing their opposition by simply answering the questions in the negative without attempting to present reasons in support of their opposition.

The difference in the importance of these replies is more clearly indicated by stating that of those received from the Mayors either for or against the increase, but sixty-nine per cent, were in favor of the increase, while should the population of the cities involved be taken into consideration the proportion in favor of the advance would be increased to eighty-three per cent. Of the replies from trade organizations either for or against the increase, over eighty-three per cent endorsed it, while of the combined replies of both the Mayors and the trade organizations, nearly seventy-nine per cent expressed themselves as favorable to it. Of the total number of replies received from all sources approximately forty per cent were uncertain or reported a divided opinion as to the attitude of the business men of their communities or of their trade bodies.

The following statement shows the population by states, which, according to the replies of Mayors was reported as either favorable or unfavorable to the increase or as uncertain. These figures, taken in connection with the number of replies received, indicate that in the more important communities, where the question has been most thoroughly ventilated and discussed, business men are admitting the justice of the carriers' contentions and desire to assist them out of their present predicament:

	Favorable.	Unfavorable.	Uncertain.
New York	270,338	132,685	85,054
Pennsylvania	1,881,066	256,883	92,948
Illinois	121,527	41,944	3,008
Ohio	168,279	85,295	560,663
Massachusetts	738,055	63,371	
Indiana	57,430	83,253	27,445
New Jersey	24,460		
Wisconsin	40,384	18,310	373,857
Maryland	21,839		
West Virginia	68,773		1,260
Connecticut	45,698	11,866	
Rhode Island	18,390		
New Hampshire	42,055		25,027
Vermont	20,486		10,132
	3,518,780	693,607	1,179,394

Another significant feature of the replies rests in an indication of a growing appreciation of the fact that without railway prosperity, general business prosperity is an impossibility. It would appear, that in dealing with the rate question, the average business man is beginning to understand that his individual welfare is dependent, to no small extent, upon a fair treatment of the railways, which in the present instance, he considers should include an advance of five per cent in freight rates.

The replies also indicate a strong sentiment in favor of granting the increases promptly. While many recognize the desirability of Governmental regulation of railway securities, it appears to be the prevailing opinion that such consideration should not be permitted to interfere with promptly granting the required relief. In other words, the average business man favors settling the case on the basis of the present financial requirements of the carriers, in order that they may continue to conduct an efficient and progressive plant; and they express a decidedly definite opinion that a decision involving this immediate necessity should not be interfered with by extraneous conditions, regarding which either Congress or the Interstate Commerce Commission is at liberty to take action at such time and in such manner, as may be considered best for the public interest.

This attitude is both fair and logical and is, of course, one which necessarily governs business affairs generally. It does not differ essentially from that of most railway officials. They also appreciate that Governmental regulation of future railway issues is a development demanded by the general public. They assert, however, and with reason, that the consideration of this question should not be permitted to delay the financial relief of which they stand so sorely in need; and in this attitude, according to the replies received, they are generally supported.

In presenting the following statements received from Mayors of cities and from secretaries of commercial organizations in Official Classification territory, an effort has been made to faithfully reproduce the sentiment contained in each communication. While, in every case, it has not been possible to present an exact quotation, owing either to the length of the letter or the irrelevance of its contents, a consistent effort has been made to give both sides of the question in the identical manner indicated by the replies. The following questions, the replies to which are indicated by the numerals (1) and (2) are the ones which the Mayors were requested to answer:

(1) In your opinion, is the sentiment of the business men of your city, expressed through the daily press by the resolutions of trade bodies or otherwise, in favor of granting the carriers in Official Classification Territory, the increase of five per cent in their freight rates?

(2) If favorable to the increase, does the public sentiment of your community desire it to be promptly granted, leaving for future consideration such individual rate adjustment as may be made necessary by the increase, and also leaving for future consideration, as Congress may see fit to deal with it, the question of National regulation of railway securities?

The question put to the commercial organizations was as follows:

Has your Association passed resolutions endorsing the proposed advances in freight rates, and if not, what is the attitude of your members towards such proposed increases?

Besides the answers to these three questions, an effort has also been made to present editorials or extracts therefrom bearing on the rate question, which have been published in the daily press in various cities in Official Classification territory during the past few months. In this manner, it has been possible to present a more complete report of the public sentiment of the various communities in the territory involved. Taken as a whole, the following statements constitute an unusually comprehensive and unbiased expression of public opinion regarding the rate question in its application to the proposed increases in Eastern territory:

NEW YORK.

REPLIES OF A FAVORABLE CHARACTER.

Mayor Joseph W. Stevens, of Albany. (Population 100,253.)

(1) The Albany Chamber of Commerce at their annual meeting, have adopted a resolution requesting the Interstate Commerce Commission to grant the application of the railroads for a five per cent increase in freight rates. It is my belief that this sentiment truly represents the sense of the business men of the community. I concur in the recommendation.

Secretary, Albany Chamber of Commerce.

The following resolutions regarding the proposed increase of five per cent in freight rates in Official Classification territory, were passed on December 8, 1913, by the Albany Chamber of Commerce:

Whereas, Financial statistics show that the savings banks of six States in the East have 6,636,343 depositors and that twenty per cent of their deposits are invested in securities of railroads and

Whereas, Albany has seven savings banks with 115,675 depositors and $88,420,704.75 total assets, a large part of which is invested in railroad securities and

Whereas, The increasing commerce of our country is constantly demanding more railroad equipment and larger terminals for its rapid movement, and

Whereas, In the present unsatisfactory totals of railroad net earnings, they are unable to borrow money for urgent improvements at a moderate rate of interest, now

Therefore, We, the Albany Chamber of Commerce, most respectfully request the Interstate Commerce Commission to grant the application of the railroads for a five per cent increase in freight rates.

Mayor of Auburn. (Population 34,668.)

(1) Yes.

(2) Yes.

Secretary, C. G. Adams, Auburn Business Men's Association.

The following resolution was adopted at a meeting of the Board of Directors of the Business Men's Association of Auburn, held on January 20, 1914:

Whereas, An application is now pending before the Interstate Commerce Commission in behalf of the Eastern railroads for an increase of five per cent in freight rates, and

Whereas, While the gross revenue of said railroads has generally increased, the net revenue has decreased owing to the raise in wages and the growing cost of the material, and

Whereas, The railroads have suffered and are suffering from inability to obtain funds for the proper development of facilities to handle increased business, said inability to obtain funds being caused by the continued decrease in net revenue,

Now, Therefore, Be it Resolved, That the Auburn Business Men's Association approves the granting of said moderate increase in freight rates in itself fair and equitable, and that they believe that the increased prosperity of the railroads will stimulate and help business in general.

Secretary, Geo. C. Lehman, Buffalo Chamber of Commerce. (Population 423,715.)

The following is a copy of the resolutions adopted by the Buffalo Chamber of Commerce in reference to the proposed increase in freight rates in Official Classification territory:

Whereas, Carriers in Official Classification Territory have filed petition with the Interstate Commerce Commission for rehearing in Docket No. 3400, in the matter of advance in rates, asking for general increase of five per cent in all freight rates, praying that the case may be re-opened and further considered, owing to increased cost of operations of various kinds set out in their petition, the net return no longer being sufficient; and the Commission being of the opinion, from a consideration of the allegations of that petition, the need of, and justification for the additional revenue should be further examined by it at the present time, and

Whereas, The Commission thinks that such examination can be made more satisfactorily and more comprehensively in a general proceeding of investigation, instituted by the Commission upon its own motion, than by a further consideration of this particular record, and further have denied the petition for a rehearing, and

Whereas, The Buffalo Chamber of Commerce has given considerable thought to this subject respecting their attitude in the matter, which they recognize as of great importance to the members of the Buffalo Chamber of Commerce, the carriers as well as the public at large, now, therefore be it

Resolved, That the Buffalo Chamber of Commerce is in cordial sympathy with the purpose of granting railroads such rates as will permit them to properly operate and maintain their properties, and pay a reasonable return on the money invested, and is in sympathy with the Interstate Commerce Commission in making a thorough investigation of the need of, and justification for additional revenue, that body to determine from the facts the necessity for said proposed advance, and the reasonableness of the rates to be established thereby, consideration being given to certain localities where the rates are now excessive and unreasonable.

Buffalo Corn Exchange. (Population 423,715.)

The Transportation Committee of the Corn Exchange and the elevator owners at Buffalo, have sent a joint letter to the Interstate Commerce Commission stating that their committees are in sympathy for the purpose of granting such rates as will permit the railroads to operate and maintain their properties so that adequate service be given to the shipping world and at the same time a reasonable return be allowed upon the money invested. Objection, however, is made to any increase in the rail and lake rates, as it is claimed by these interests that traffic moving under these rates has already contributed its full measure to any reasonable advance.

William B. Curtis, Secretary, Dunkirk Board of Trade. (Population 17,221.)

No formal resolution has been passed by our organization nor has the matter been submitted to them, but an informal canvass convinces us that the opinion of our members is practically unanimous in favor of the request for an increase of five per cent.

Mayor W. Irving Greffing of Glens Falls. (Population 15,243.)

(1) Yes.

(2) Yes.

Mayor of Hornell. (Population 13,617.)

(1) It seems to be the sentiment among the fair minded that an increase ought to be permitted in freight rates commensurate with the railroads' increased expenses and our Chamber of Commerce has written Congressmen that it favors a reasonable increase.

(2) Yes.

Secretary, Hornell Chamber of Commerce.

The following resolutions which express the attitude of the Hornell Chamber of Commerce regarding the proposed increase in freight rates of five per cent in Official Classification territory, were adopted on December 22, 1913:

Resolved, That the Hornell Chamber of Commerce records itself as in favor of the application of the railroads for a reasonable increase of freight rates; that in our opinion such increase is necessary on account of business conditions and increased cost of operation, and that it is advisable because it will result in better railroad accommodations, more railroad construction and safer transportation; and that the secretary be directed to communicate this Resolution to our Congressman and to E. E. Clark, Chairman, Interstate Commerce Commission.

Mayor Louis Van Horsen of Hudson. (Population 11,417.)

(1) Yes.

(2) Yes. I believe that ninety per cent of the intelligent class of our people feel that the constant agitation against railroads is being carried too far and that government ownership is a dangerous undertaking.

Secretary, A. J. Bootey, Manufacturers' Association of Jamestown. (Population 31,297.)

The postal card vote on the increase of freight rates asked by the railroads now being conducted, has resulted so far in 38 replies being received in favor of the increase, and only five against it.

Mayor Frank J. Nelson, of Lackawanna. (Population 14,549.)

(1) Yes.

(2) Yes, decidedly, as it affects business in our city.

Secretary, Frank S. Gardner, New York Board of Trade and Transportation. (Population 4,766,883.)

The following report of the Executive Committee of the New York Board of Trade and Transportation adopted on November 12, 1913, expresses the attitude of that organization towards the proposed increase in freight rates:

Your Committee is impressed with the great importance of a proper decision of the matter at issue in the above proceedings not only to the railroads whose rates and charges are to be affected, but also to all the business interests of the country.

Business men are naturally adverse to any increase of the charges they shall be obliged to pay for any service they receive. But they are interested in and favor the adoption of all measures which are necessary to insure the efficiency of service and safety upon railroads. If an increase of freight rates can be shown to be necessary to these ends we believe that all fair-minded business men will cheerfully accede to any advance which the Interstate Commerce Commission may determine to be required.

For thirty years or more National and State legislation, local ordinances, taxation, and advances in wages have been adding progressively to the costs which the railroads are compelled to bear. All of these exactions are ostensibly imposed in the public interest. Some are doubtless unreasonable and unnecessary, but they all tend to increase cost of service. They have been compensated for to some extent if not wholly, by improvements in cars and various devices and by improvements in management.

Every advance in the cost of production or of service, whether to a manufacturer, a merchant or a railroad must be met by some compensating reduction elsewhere or the balance will go on the wrong side and decay begin.

A limit is fixed beyond which governmental exactions imposed upon railroads may not go—they shall not be confiscatory. But there is a point short of confiscation where burdens, although legally imposed upon railroads, begin to work decay and ruin.

Capital is attracted to a railroad by the same inducement only which attracts it to a manufacturing or a commercial business—by the promise of an adequate revenue. The denial of adequate revenue discourages investments. Inadequate capital leads to decadence in a railroad, to inefficiency and calamity.

Rates should be high enough to provide for maintenance and operation, and for a reasonable return or revenue upon necessary capital invested.

We disagree, however, with the proposition that rates charged should provide railroads with capital to make such extensions as should be the functions of new investments. Presumably, when the demand for new capital arises it is a result of an enlarged traffic. If by efficient management the larger traffic can be handled without proportionate increase of capital it is manifest that the profits realized will be greater in proportion to the investment, and this greater profit, of itself, should be an adequate inducement to sufficient new capital to enable the railroad to handle the greater traffic without an increase in freight rates.

We believe that the validity of the demand for a five per cent increase in freight rates should be tested by this principle alone, but in expressing this opinion we do not prejudge adversely the case in question. We believe that railroads should be liberally dealt with because upon their efficiency and ability to meet the demands of constantly growing business depend the development and progress of the country. The proposition for a five per cent increase of freight rates should be the subject of a most thorough and searching investigation. Nothing short of clear and convincing evidence will properly answer the demands of the railroads if the increase should be denied, or will satisfy the public if it be acceded to.

We, therefore, recommend that the whole subject be referred to the Committee on Railway Transportation of this Board with the request that it take it under careful consideration, and the Committee be empowered to make such representations to the Interstate Commerce Commission as to it shall seem proper after ascertaining the further views of the members of this Board.

All of the papers, communications, schedules and orders connected with the foregoing are attached to this report.

Respectfully submitted,
JAMES TALCOTT,
FRANK BRAINARD,
S. V. V. HUNTINGTON,
WILLIAM H. GIBSON,
STEPHEN FARRELLY,
EDWARD F. COLE,
WILLIAM McCARROLL,
LEWIS NIXON,
For the Executive Committee.

The foregoing report was unanimously adopted at the monthly meeting of the New York Board of Trade and Transportation, held November 12, 1913.

Attest: FRANK S. GARDNER,
Secretary.

Manhattan Club, New York City.

The following resolutions were adopted at a meeting of the members of the Manhattan Club of New York City, held on February 5, 1914. It is of interest to note that the names which were signed to these resolutions but which we are unable to present owing to lack of space, are stated as representing business concerns who annually pay $1,500,000 in freight bills to the carriers.

To the Interstate Commerce Commission—
Washington, D. C.

Whereas, The value of the nation's farm products during the year 1913 reached unparalleled totals and the export trade of the United States in those staples touched figures never before attained, and further the balance of trade in favor of this country is a large one, we are nevertheless at the present time facing an unusual condition, where in accordance with the statement of the Department of Commerce and Labor recently issued, the percentage of unemployed labor is greater than it has been in seventeen years, and business in general throughout the United States is in a depressed condition, and

Whereas, Money is abundant for manufacturing and commercial purposes, nevertheless manufacturing industries are lagging, brought about largely by lack of confidence and belief that the railroad systems of the United States are not in a position of keeping up their properties to the highest state of efficiency, and

Whereas, Furthermore, The parties hereto affixing their signatures, in meeting held at the Manhattan Club, New York City, on Thursday, February 5, 1914, represent purely and only manufacturing and commercial interests that pay freight to the railroads for carrying of their merchandise, nevertheless said parties affixing their signatures hereto are heartily in favor for themselves and for the respective firms and corporations which they represent, of paying and acquiesce in the advance asked for by the Eastern railroads, and feel particularly that until such time as a decision is rendered by the Interstate Commerce Commission that business will continue in a depressed state and therefore be it

Resolved, That the parties affixing their signatures hereto acquiesce in the advance in rates if found necessary by the Interstate Commerce Commission in order to provide business with efficient service, restore general confidence throughout the country, decrease the percentage of the unemployed, and further be it

Resolved, That those parties affixing their signatures hereto urge particularly upon the members of the Interstate Commerce Commission to decide with the least possible delay the vital question before them, so that if they see fit to grant the increase asked for, general business may speedily have the stimulating influence of vigorous railway purchases and thereby stimulate all lines of manufacturing and commercial business.

New York Hide and Leather Association.

On January 13th, the Hide and Leather Association of New York adopted resolutions favoring the five per cent increase in freight rates in order that "business may speedily have the stimulating influence of vigorous railway purchases and that the percentage of unemployed may be quickly thereby decreased.

In presenting the resolution, J. Stevens Ulman of the F. Blumenthal Company said:

> The rate increase asked for is such a small one comparatively, and the consequent increased charge incumbent upon each shipper is such a small increased expense in the conduct of his business, that so far as I can see, it would be many times overcome by the ability of manufacturers and merchants to conduct a normal, instead of what threatens to be a constantly decreasing, business.

Mayor Silas W. Berry of Norwick. (Population 7,422.)

(1) After consulting with the business men and the Board of Trade, it is my opinion that there is no objection to the five per cent increase as outlined in your letter.

(2) As far as I can learn, this proposition would be perfectly satisfactory.

Mayor of Oneonta. (Population 9,491.)

(1) The consensus of opinion of the business men of this city, including those who would have to pay the advance rates, is in favor of granting the five per cent increase for which the roads have petitioned. It is thought such increase would do more than any other one thing to restore the prosperity of the country.

(2) Such increase should be granted forthwith and, as a separate proposition, measures should be speedily adopted to regulate the issuing of railway securities.

Thos. Nelson, Jr., President, Village of Peekskill. (Population 15,245.)

(1) Yes.

(2) Yes.

Mayor D. W. Wilbur of Poughkeepsie. (Population 27,936.)

(1) From my conversation with business men in this city and elsewhere, I gather that the feeling is quite general that the railroads are entitled to consideration in this regard, provided, the roads can show that the increase is necessary to meet running expenses, fixed charges and such betterments as might reasonably be provided for out of net earnings. I also find some business men expressing the belief that some portion of the increase if granted, might be used for the payment of dividends on fictitious stock values. In the long run, I think this problem will work itself out along lines of fair basis to both the railroads and the public. For if Congress gives to the Interstate Commerce Commission the right to fix and reduce rates, the railroads have the right to insist on these rates being fixed at such a point as to enable them to pay a sufficient interest on both capital and bonded indebtedness. Otherwise, the day will surely come when it will be impossible for the railroads to procure necessary capital with which to make the betterments constantly insisted upon by the traveling public.

(2) As to the question of National regulation of railroad securities, I think the sentiment is entirely unanimous among business men that this is the proper thing to do.

Secretary, Howard E. Taylor, Chamber of Commerce Poughkeepsie. (Population 27,936.)

The opinion of business men in this city is that some relief must be extended in the matter and that the public has no right to accept good service unless sufficient charges are allowed to permit good maintenance and pay a reasonable return on the dividend.

Secretary, Roland B. Woodward, Rochester Chamber of Commerce. (Population 218,149.)

The Chamber of Commerce has not taken official action on the proposed increase in railway freight rates. Little or no opposition has been voiced and without doubt, many of our members are not unfavorable to the proposed advance; but the general feeling here has been one of inability to reach a conclusion owing to the intricacies of the subject, but friendly and sympathetic towards the railroads.

Mayor H. C. Midlam of Rome. (Population 20,497.)

(1) The opinion of the business men in this community with reference to the contemplated increase in freight rates, is best expressed by a resolution adopted on July 15, 1913, which requests the Interstate Commerce Commission to grant to the railroads as promptly as circumstances will permit, permission to advance freight rates in the uniform manner set forth in their petition, upon presentation of such figures as will prove the necessity of such increase.

Secretary, Joseph F. Leopold, Asst. Secy., Syracuse Chamber of Commerce. (Population 137,249.)

While no resolutions have been passed by our Board on the subject of an increase in freight rates, it is the consensus of opinion here that they should be increased.

REPLIES OF AN UNFAVORABLE CHARACTER.

Secretary, Gowanda Board of Trade.

This Board has taken no action in reference to the increase in freight rates, but, personally, I assume that the members would be opposed to any increase owing to the fact that the majority of them are manufacturers and as a general proposition, heavy shippers.

Mayor Samuel A. Carlson of Jamestown. (Population 31,297.)

(1) No.

Mayor of Johnstown. (Population 10,447.)

(1) No, whether this increase is an economic justice or not, the general sentiment here is opposed to it.

Mayor of Plattsburgh. (Population 11,138.)

(1) The Common Council of this city says, No.

Secretary, I. W. Cleveland, Sag Harbor Board of Trade. (Population 3,408.)

This matter has never been called to our attention. I think the freight rates are high enough now.

Mayor of Yonkers. (Population 79,803.)

(1) No.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, William Nelson, Binghamton Chamber of Commerce. (Population 48,443.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

John E. Cooney, Secretary, Cohoes Business Men's Association. (Population 24,709.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, C. H. Jones, Cortland Chamber of Commerce. (Population 11,504.)

No action has been taken by this Chamber of Commerce for or against the increase of five per cent in freight rates in Official Classification territory.

Secretary, J. E. Bally, Elmira Chamber of Commerce. (Population 37,176.)

No action has been taken by the Chamber of Commerce for or against the increase of five per cent in freight rates in Official Classification territory.

Secretary, S. Henry, Johnstown Board of Trade. (Population 10,447.)

No action has been taken by this Board of Trade for or against the increase of five per cent in freight rates in Official Classification territory.

Edward S. Griffing, Mayor, New Rochelle. (Population 28,867.)

(1) Request referred to the Merchants' Exchange for attention.

Secretary, New York City Mercantile Exchange. (Population 4,766,883.)

No action has been taken by this Exchange for or against the increase of five per cent in freight rates in Official Classification territory.

Superintendent, Wm. V. King, New York City Cotton Exchange.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

John A. Rafer, Mayor, North Tonawanda. (Population 11,955.)

(1) I am not able to give you much information on the above subject not having given the matter attention. Without specific information I am of the opinion that the shippers would oppose any increase in freight rates.

Secretary, Lachlon Macleay, Oswego Chamber of Commerce. (Population 23,368.)

No action has been taken by this Association for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Frank Libolt, Mayor, Port Jarvis. (Population 9,564.)

(1) I have heard the matter discussed but little and am not in a position to make a statement as to what the sentiment is in this city.

Secretary, Salamanca Business Men's Association. (Population 5,792.)

No resolutions have been passed by the

Business Men's Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Savona Board of Trade.

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Horace W. Raymond, Board of Trade, Schenectady. (Population 72,826.)

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

NEW YORK EDITORIAL COMMENT.

Albany (N. Y.) Evening Journal, May, 1913.

Short term notes have had to be put out at high rates of interest. Higher rates of interest have had to be allowed on new bond issues, and, then, besides, the bonds have had to be sold at a discount that adds much to the burden of financial obligation. Inevitably, unless relief is granted them, the railroads will soon be unable to negotiate additional loans on any terms, since capital will shrink from investment where not only the return upon it, but even security, becomes more and more uncertain.

Albany (N. Y.) Journal, November 25, 1913.

Opposing the application for increased rates are shippers, whose attitude is illogical, unfair and shortsighted. Knowing that the expenses of the railroads have greatly increased, they still insist that they shall not receive more for the service they give. If their opposition should be successful, they could not expect to have the same adequate and efficient shipping facilities at their disposal.

And what would they say if a government agency should be asked to prevent them from so adjusting prices to cost of production of the things which they ship, as to leave them a fair margin of profit? Wouldn't they protest indignantly against such injustice?

The shippers who stand against the railroads before the Commission in this matter cannot justify their position, and can explain it only on the ground that they want for themselves advantages to which they are not entitled, regardless of the certainty that acceptance of their contention would demoralize and paralyze the railroad business in this country.

Auburn (N. Y.) Journal, January 21, 1914.

The indorsement by Auburn business men of the plea of the railroads for permission to advance freight rates five per cent is the logical sequence of sentiment vouchsafed at the recent banquet.

In indorsing the plea of the railroads, the Auburn business men are assuming a position pre-eminently unselfish. With the remaining business men of the country, they will be the ones to be taxed, in the first instance, for extra freight rates. The part each will bear will be infinitesimal, as has been already pointed out. But this does not alter the fact that the business men, recognizing the justice of a case, are willing to concede a living wage to the railroads of the country.

Buffalo (N. Y.) Commercial, July, 1913.

"There should be little trouble experienced in convincing the Commission that there are good and legitimate reasons for presenting the request, in view of the heavy burdens which have been placed upon the roads by recent legislation and the demands for increased wages which they have granted. Added to these features of the case is the large amount of money which will be required to place road equipment in shape to meet the constantly increasing requirements of the freight carrying business.

"There is a strong public sentiment that the roads are fully justified in their contention that an increase in rates is not only just to shippers, but absolutely necessary if the ability of the roads to handle the rapidly increasing volume of business is to be maintained."

Buffalo (N. Y.) Commercial, November 24, 1913.

There are strong arguments to be presented by the roads in favor of their contention, and it is believed that the result of the hearing will be at least a partial concession on the part of the Commission. There can be no disputing the fact that the expenses of the roads have increased greatly as a result of legislative action during the past few years. Certainly, the matter should be thoroughly probed.

The increase asked for is a moderate one and might well be accepted by shippers, who must see that their own prosperity is bound up in the prosperity of the transportation lines of this country.

Buffalo (N. Y.) Courier, January 5, 1914.

In practically all parts of the United States the best business opinion holds that the country is at the threshold of a period of general prosperity. The remaining thing needful, indispensable, for good times, is that the railroads may prosper, for in very great number the people have investments in the transportation properties and these constitute a factor of immeasurable importance in the national business life.

There is nothing intricate or complicated in the affair of the application of the railroads to the Interstate Commerce Commission for permission to make a slight advance of freight rates. The case is simple enough for anybody to understand. The railroads must subsist on what is paid them by their patrons. The cost of everything has advanced in recent years, the public demand for efficiency is imperative. Every road must be kept up to an increasingly exacting standard in its construction and equipment. The cost of operation has been largely increased by the steady rise of salaries and wages. Such a continual growth of expense cannot in reason endure without wiping out profits and diverting investments from railroad securities if any corresponding increase of revenue is arbitrarily forbidden. The transportation requirements of the country grow apace. The gross receipts of the railroads last year perhaps increased, but the net receipts were reduced, notwithstanding the practice of rigid economies. The roads cannot retrench further with safety of operation and efficiency of service. The five per cent increase appears alike to be necessary for their well being and for public welfare. Dispassionate examination of the situation compels belief that the Interstate Commission should grant the relief sought, as quickly as may be.

Buffalo (N. Y.) Courier, January 27, 1914.

This is a matter with close and active relationship to the business welfare of the country. That other business interests cannot healthily and permanently prosper unless the railroads have some share of prosperity is made obvious by the magnitude of the investment in the nation's rail transportation system. The managers claim the railroads cannot thrive unless allowed to increase revenue to correspond in some degree with increased cost of maintenance and operation.

The justice of the proposed increase is conceded by many shippers. Others, with narrower view and concerned first and last for the individual profit, will oppose any increase of rates on freight of the classes in which they deal.

Buffalo (N. Y.) Enquirer, November 25, 1913.

The railroads' cost of living has vastly increased. Earnings have not increased in proportion. A very large part of the increase of the railroads' cost of living has been forced upon them by legislation increasing their taxes and the number of employes and by the arbitration of wage disputes. At the same time, the roads have been restrained by authority from compensating themselves by increasing their income from transportation. The railroads' statement of the case is reinforced by statistics which make their situation plain.

The roads, in fact, state the case so clearly that the public is likely to be reconciled to the increase of five per cent should the Interstate Commerce Commission grant it.

Buffalo (N. Y.) Express, November 27, 1913.

The rate question should be passed upon strictly on its merits. Regardless of what has gone before, have the railroads as large an income as they should have to do all that is required of them and pay fair returns to investors?

Buffalo (N. Y.) Times, May, 1913.

The railroad managers are speaking plainly and apparently honestly on this subject. They present the proposition that, if expenses are to be advanced, they must be permitted to advance rates. The facts behind the agreement are impressing the public mind and creating the sentiment to bear with good humor whatever compensatory advance of rates may be necessary.

Buffalo (N. Y.) Times, December 16, 1913.

General sentiment seems to be in favor of granting the five per cent additional freight rate, for these reasons among many others: Railroads, like other businesses throughout the country have increased the pay of their employes from twenty to forty per cent. With this advance in the pay of the workingman has come almost a corresponding decrease in the hours of labor.

While some lines of enterprise may be able to increase the wages of the worker, and at the same time keep abreast of operating expenses and pay a dividend by greater volume of business, in railroad management, wherein labor forms so large a part of the cost of operation, increase in volume of business alone, is not enough to maintain proper standards of equipment and operation and pay a fair dividend to stockholders.

There seems to be a deep-seated impression among the people generally, that it would be a good thing for the public, for the Interstate Commerce Commission to grant the five per cent increase in freight charges, asked by the railroads.

Buffalo (N. Y.) Times, December 18, 1913.

It appears to be the very general consensus of opinion, that granting, by the Interstate Commerce Commission, of the five per cent increase in freight rates, which the Eastern railroads are asking, would give a powerful impetus to the business of furnishing railroad supplies, and thus would materially assist the prosperity of the wage-earner and the country.

Railroads in the East have been curtailing their orders of rails and other equipments, because they find it impossible to purchase these materials in such quantities as are necessary, and at the same time maintain operating expenses and pay the trainmen and conductors the $6,000,000 yearly additional wages which must be paid under the recent arbitration award.

That this award was fair and just, is undisputed. But the cost it entails is an economic factor which must be reckoned with in arriving at a correct understanding of the railroad situation.

The railway supplies business is an immense industry. It employs more than a million workers, and these in turn furnish means of support to approximately three or four million people. Add the businesses engaged in supplying those directly or indirectly dependent on the railroad equipment industry, with food, clothing and shelter, and we have some idea of the vastness of the scope of that industry, and its intimate relation with the general prosperity.

Five per cent additional in freight rates, a percentage moderate in itself, which would not be an appreciable burden to the shipper, and would not be felt, or indeed, scarcely realized, by the masses, would be money well invested by setting the railroad supplies industry on its feet, and thus giving a boost to prosperity all along the line, especially in the Eastern States.

Buffalo (N. Y.) Times, December 20, 1913.

The elaborate and instructive report of the Interstate Commerce Commission, just made public, contains many suggestions for safety, notably the recommendation for installment of steel cars on all high speed trains.

That this precaution and all others necessary for preservation of life and limb of railway passengers and employes, should be adopted "The Times" cordially agrees.

But it cannot fail to impress the Interstate Commerce Commission, as it does all, that these needful and urgent recommendations carry with them a heavy expense to railroads, and this has important bearings on the application for a five per cent increase in freight rates, soon to be heard by the Interstate Commerce Commission.

To carry out the necessary improvements, the railroads must have money with which to do it. Granting this request for a moderate additional freight rate, a per cent so small, that it will nowhere be felt as a burden, would materially assist in solving the imperative problem of railroad safety.

Brooklyn (N. Y.) Citizen, May, 1913.

It should not be the province of the Government to starve the railroads into bankruptcy, for by so doing the greatest of all our public utilities will be crippled and made useless, and the millions who have their little patrimony invested in the stock will meet with hardships that they cannot well suffer.

Brooklyn (N. Y.) Citizen, November 25, 1913.

Since the existing rates went into effect, operating expenses and taxation have increased at a greater rate than operating revenues, so that the railroads find themselves in this position, a smaller net income with bigger revenues and larger investment of capital to meet the demand for improvements and increased efficiency.

In view of all the circumstances, the request for an increase of five per cent in freight rates seems moderate. The railroads are a necessity, and in order to maintain them at the highest point of efficiency, the capital and energy put into them must show an adequate return.

It is true that the growth of the country sees a steady increase in gross revenues from operation, but this increase goes hand in hand with the corresponding phenomena of increased taxation and increased wages. The trouble with the railroad situation is that the latter increase has been greater than the former, so that the railroads find themselves in the unfortunate condition of doing a larger business with less actual net return. Naturally, values of railroad stocks show a decline, and capital for needed improvement becomes more difficult to obtain.

Brooklyn (N. Y.) Eagle, November 24, 1913

It is significant that among the supporters of the application are a number of large shippers whose expenses will be materially increased in the event of a favorable report. These men, however, realize as all intelligent Americans must, that the railroads are being crippled by the exactions of the labor unions, by the greater cost of supplies, by such freak legislation as full-crew bills, and by the difficulty of raising money to meet the cost of expensive improvements. And in spite of the handicap which those burdens impose, the railroads are living on freight schedules prepared when conditions were very much more in their favor than they are to-day.

Railroads cannot be run at a loss. They cannot even be run on profits so small that investors will decline to purchase their stocks. They must have a chance not merely to exist, but to progress. Their prosperity is part and parcel of the country's prosperity, and injury to them implies injury to a great variety of other enterprises.

Ithaca (N. Y.) Journal, January 7, 1914.

There is no question that the showing made thus far by the railroads before the Interstate Commerce Commission has been very strong.

The railroads are entitled to reasonable compensation for their services. The companies have been compelled the past few years to raise the wages of thousands of employes and to undergo other expenses, but have not been given a chance to gain anything in turn. An advance in freight rates would not take money out of the pockets of anybody except a few big shippers. It could not be made a reason for boosting the prices of goods as the advance asked for is so small that it would mean practically nothing to the average shipper.

Kingston (N. Y.) Leader, January 12, 1914.

The matter of an increase of five per cent in the freight rates in what is known as the Official Classification Territory is now before the Interstate Commerce Commission. It is generally conceded in behalf of the railroads that their operating expenses have been heavily increased, that wages are higher, that materials cost more, that various regulative measures enacted by Congress and the State legislatures have added to their burdens and at the same time made inroads on their earnings.

The increase in rates asked for is moderate and practically horizontal, treating all shippers and all districts alike. There is no organized opposition to the advance. Shippers are not finding fault with it to any extent. The important commercial bodies of the country seem to allow that the railroads are reasonable in their demands.

Mt. Vernon (N. Y.) Argus, December 10, 1913.

These figures give some indication of the position of the railroads, and show why their net earnings are reaching a point where dividends are in danger.

Everybody knows that railroads must earn more than dividends if they are to keep pace with the growth of the country, so it is apparent, if their figures are correct, that they must be allowed to earn more money, or that every line of business in the country will suffer.

The country cannot prosper if the railroads do not.

New York American, May, 1913.

The granting of the Eastern railroads' application for (five per cent) higher freight rates would have immediate and marked effect in restoring confidence in railroad securities. Not a few railroad bonds are now at panic prices, while stocks in several prominent instances are at the lowest levels in recent years. The costly floods and the adoption of higher wage scales have aggravated the situation.

New York City, American, December 11, 1913.

Let the business world know where it is at. Let the railroads know whether they may resume placing orders, and thus stem the rising tide of unemployment, or whether they must adjust themselves to conditions they complain have become well nigh intolerable. Let investors have an idea of where they are to stand.

Everybody just now is in the dark. Everybody is guessing—and fretting.

A decision favorable to the railroads would do more than any other single act to check the oncoming march of hard times and start a revival in business, in investments and in confidence.

New York, The American Review of Reviews, November, 1913

The "cost of living" for the railroads throughout the country, augmented as it is by numerous money-devouring improvements demanded by the public but returning no additional income, is making the lot of the railway administrators anything but a happy one, and is leading to open talk of eventual government ownership.

Among business men it is very generally conceded that there is now at least a fair question whether the roads should not be allowed some increase in freight rates that will allow them to stand the higher wage schedules and other enhanced expenses and still have something left over to invite capital. The new capital must be had, in great volume, to furnish the better facilities, safety appliances, and comfort that the country demands.

New York, Bache Review, April 5, 1913.

"It is remarkable that the condition and needs of so great an industry as that of the railroads—the largest industry we have in our commercial world and the one whose prosperity affects favorably all other enterprises—should be neglected. But the railroads for several years have been laboring under adverse conditions, the result of unwise legislative action, and there seems to be no coercive force to relieve them.

"The roads are being hampered by the Interstate Commerce Commission, by the Government in mail contracts, by state legislators and commissions, and by labor combinations.

"The burdens imposed upon them and the privileges withheld make it impossible to earn adequate sums to protect and insure dividends with ample margins of safety and so build up credit, attract investment, and make badly needed equipment and terminal expenditures in sufficient proportion to keep pace with the country's growth and facility-needs. Taxes have been increased enormously and higher wages are being constantly demanded. This week the Full Crew bill was signed by Governor Sulzer and will add $2,000,000 to railroad expenses in this State. This same character of bill was vetoed by former Governor Hughes and Dix and has been killed recently in many States. Railroad men and experts say that no greater safety will be obtained under this bill, but rather that it will prevent other expenditures for real safety which cannot now be afforded.

"Fair play for the railroads should be demanded by the business public, whose vital interests and those of the whole people are damaged by continuance of the present conditions. The four million investors in railroad stocks should make themselves felt in state and national legislatures."

New York Commercial, May, 1913.

Shippers of course will object on general principle to increase of rates; but it is far more important to them that the carriers shall be in the highest degree effective and fully competent for the best work in transportation, than that the rates should remain as at present.

New York, Drygoods Economist, November, 29, 1913.

For one thing, the railroads of this country are not owned by a few millionaires; their stocks and bonds are widely distributed, and, it is, therefore, a large section of the people who suffer if the roads cannot pay fair dividends.

But, above and beyond all this, the public must be carried from place to place rapidly, in comfort and in safety, and freight must be moved on time. When, for lack of funds, the equipment of the roads becomes inadequate, producers, distributors and consumers alike must bear their share of the burden. Not only this, but there are vast sections of this country whose development is now seriously delayed by lack of transportation facilities.

There will always be three camps, the ultra-radical, the pro-railroad and the dispassionate—in which last, of course, the Interstate Commerce Commission and the business men of the country should belong. All who are in this third group will consider whether the saving effected by a maintenance of the present rates would not prove far more costly than would an advance of five per cent—in other words, whether the saving in freights might not prove a small matter in comparison with the increased trade made possible by better and more extended transportation facilities.

New York, Evening Globe, December 9, 1913.

On the state-owned railways of Italy, Switzerland, Belgium, Hungary and Denmark, material reductions in net income have occurred and in all these counties the governments have increased rates. In Australia in six years the railway revenue devoted to wages has increased from 37.30 per cent to 49 per cent and in the same time the surplus after other expenses were met has fallen from 12.97 per cent to 2.77 per cent. To prevent the disappearance of surplus altogether the government has announced from the commencement of the current fiscal year an increase of rates. Railroad rates abroad, though already from 50 to 100 per cent higher than the charges in this country, have been advanced from five to ten per cent during the last two years.

New York City, Evening Post, November 25, 1913.

The case in support of the application of the railroads for permission to increase their freight rates, as submitted to the Interstate Commerce Commission, is very strong. If the facts as stated are correct it is difficult, if not impossible, to resist the conclusion that the railroads are entitled to relief.

Three years ago "The Globe" practically alone among the newspapers of New York, opposed the increase of freight rates then asked for. It did not think that the railroads had established their case. The figures then showed a rising instead of a failing divisible net income. We thought it unfair to ask the Commerce Commission to guess concerning the future and to authorize higher rates on the ground that perhaps they might be necessary. We thought it reasonable to ask the railroads to wait until such time as they could show actual impairment of the income.

The reasoning that supported opposition to an increase of freight rates three years ago now seems to require approval of an increase. Outgo has caught up with and passed income. The Commission faces facts fundamentally different from those of three years ago.

New York City, Evening Sun, November 24, 1913.

In the year 1908, six-tenths, or very nearly, of every dollar earned by the railroads of the country was paid out for labor, in one form or another. Less than two-tenths, less than one-third of the labor bill, went to pay the interest on the railroads' debt and the dividends. And of the railroads' debt, an enormous portion, in turn, represented nothing save money originally paid to labor for the roads' construction and equipment.

Since 1908, when these figures were attained, two large increases have materially raised the labor share of the dollar earned by the railroads. But there is still only a dollar. No general increase in railroad transportation rates has taken place, for none has been allowed. Therefore, the added wages are being paid partly out of sums formerly put into betterment of the properties.

The moderate fruits of railway enterprise to the owners have been severely pinched back, at the risk of discouraging the railways' future development, which cries for more capital, even while our laws blight the capital already invested. Now is high time for the Government to take steps to end this situation with its all-around danger to the country at large.

New York City, Evening Sun, November 28, 1913.

Railroads that haven't proper facilities and no money to get them can't be as useful to shippers as those that have. New and efficient servants are hard enough to get, but new and efficient railroads are infinitely harder. Shippers and railroads have more things in common than both sides seem to imagine. And everybody else in the country has some financial interest, however small, in the outcome of the controversy.

New York, Financial America, May, 1913.

Railroads cannot operate without capital. They cannot secure capital without credit. The present state of the bond market shows that railroad credit is not a certain attraction for the investor. Under this condition the carriers cannot give the country necessary traffic improvement, because they have no available money for such a purpose; and it is out of the question for them to assume the obligation of obtaining it by means of high interest-bearing, short-term financing.

New York Herald, May, 1913.

Unless they are promptly permitted to increase their charges they cannot continue to supply efficient service even on the present basis, and are assuredly unable at this time to comply with the unreasonable demands of employes, involving further enormous increase of operating cost.

New York City, Herald, December 12, 1913.

We believe that conditions in this country are good and that the railroads are going to continue to make money, but in making that statement, we also voice faith in the ultimate wisdom of President Wilson and his Interstate Commerce Commission at Washington. It would seem to many persons that the time has almost been reached when some assurance of a favorable character should be given by them.

New York City, Herald, December 16, 1913.

And the railroad situation can easily be remedied. The Interstate Commerce Commission has an ill patient on its hands. The plain truth about it is that this situation must be met and should be met quickly. There has been more humbug in the attacks upon the railroads than in any other discussion before the public in the last ten years.

The country has stood by and seen the railroads required to put forth in increased expenses sums which but for the most extraordinary economies would have eaten up the entire gross operating income. We think public sentiment is going to move that glacier at Washington known as the Interstate Commerce Commission. Perhaps a few thousand idle locomotive builders marching down in a body would help start it.

New York Journal of Commerce, May, 1913.

Where the prospect of net earnings is uncertain there is a risk in railroad investment which demands a high rate upon loans and makes the placing of new stock difficult. It makes the raising of capital costly and the cost must be met out of earnings. This restricts improvements and cripples service as the demands of traffic increase. There is no way of relief but in such an advance in the rates to be charged for service as will produce a condition of greater ease and confidence. This concerns the interests of shippers and the public as much as it does the railroads and the investors in their securities. Rates for railroad transportation are among the smallest items in the cost of doing business and meeting the wants of producers and consumers in the distribution and interchange of commodities.

New York Journal of Commerce, October 31, 1913.

There must be a great deal of new capital raised, and for that the credit of the companies must be maintained. The basis of their credit is earning power and that can be sustained only by sufficient rates for a return upon investment that will invite further investment in their securities. This is a matter which does not concern alone the management of the roads and their creditors and shareholders. It concerns as well their shippers and the industries and business of the public. It is a question whether the increase in rates asked for, diffused as added cost throughout the producing and trading community, will be equal to the loss that would follow from a failure to provide adequate facilities for transportation—whether, in point of fact, it will not result in saving and gain instead of loss as it works out its effect. What the Commission has to consider is whether the increase in rates will not be in the interest of the public even more than that of investors in railroad securities.

New York Journal of Commerce, November 28, 1913.

The raising of new capital is something that cannot be done at will. Present investors may be forced to stand loss, but new investors cannot be compelled to take securities. They must be attracted. There must be the inducement of an assured return as good as can be obtained from other forms of investment. The railroad companies must have credit, and credit depends upon being in position to pay a fair profit upon investment. It depends upon earning power. If an advance in rates is necessary to enable the railroads in the joint traffic association territory to raise capital for needed facilities in order to render the service which the public demands and to which it is entitled, that ought to settle the question, for it is primarily the public that is to be benefitted and not the railroads as a separate financial or business interest. It is the interest of the public which the Interstate Commerce Commission is bound to consider and in this case it is inextricably bound up with the interest of the railroads.

New York Journal of Commerce, December 18, 1913.

The railroads should be allowed to frame their own schedules of rates and file them, subject to subsequent correction where they can be shown to be excessive, ill-adjusted or in any way unjust or unreasonable. It is for the interest of the railroads to make them favorable to the industrial and business activity of the country, and they can be held accountable for discrimination or injustice without being bound hand and foot and held down by an inert body of officials with an intolerable load on their shoulders. The railroads have had their lesson and are suffering their penalty. What they need now is more freedom of action within legal limits and under rational supervision, and not further bondage or absolute death, with politicians waiting to seize the carcass.

New York Journal of Commerce, January 12, 1914.

Shippers of merchandise are showing an increasing interest in the question of allowing the Eastern railroads to have the advance in rates for which they have applied to the Interstate Commerce Commission, and in having that question disposed of without unnecessary delay. They are evidently coming more and more to realize that the interests of business do not lie in screwing rates for transportation down to a point where it will impair the capacity of the railroads to keep up their service. It will cost business much more to have transportation hampered, delayed or endangered for lack of adequate facilities than it will to pay sufficient rates for the service to enable the roads to keep up their facilities and their efficiency in operation.

New York, Leslie's Weekly, May, 1913.

At heart the American people love fair play. Whatever may have been their sins in the past, the railroads are to-day striving against great odds to give the public the best sort of service.

New York, Leslie's Weekly, May, 1913.

"It seems very simple to see the passenger trains run in and out of the station; to order the freight car and send the grain to market; to telegraph to the nearest large town for supplies, and in 24 or 48 hours have them delivered. But it is not so easy and simple as it seems, and there is danger to-day that the next great uplift in business in the United States will find the railroads, as a whole, sorely taxed to furnish the transportation needed for the commerce of the country. Why? Because a misdirected public opinion is demanding rates too low, taxes too high, wages too high, service too elaborate, and there are not cents enough in the dollars to meet all these obligations and still permit the business to be attractive enough so the man with the dollar will invest it. Our American railroads have done good work, and can do better, and it is to the farmers' selfish interest to see that they are so treated that they will be ready at all times to handle business. To be ready requires constant expenditure."

New York Mail, May, 1913.

"There seems to be justice and common sense in the proposed application of the Eastern railroads to the Interstate Commerce Commission for permission to make a five per cent increase in their freight rates.

"The time has come when Government recognition of rates should be justified by a spirit of fair dealing and a recognition of actual conditions.

"Nowhere in the country is there a sign of public opinion that favors a policy of discouragement or actual hostility to legitimate railroad enterprise.

"There is no reason why sound railroad enterprise should be harassed or destroyed.

"There is no reason why the railroad companies should not be able to make improvements necessary to the country's progress and prosperity, to allow reasonable advances in wages and to meet unavoidable losses.

"There is no reason why the transportation facilities of the American continent, so vital to its industry and commerce, should be gradually forced into unprofitableness to meet the purposes of political demagogues and fanatics.

"It is not merely the falling prices of railroad securities in the stock market that signals the danger of the present iron policy of restricting railroad rates. The refusal of the public, both here and in Europe, to invest money in new bonds or other securities of the foremost and best-managed American railroads, save at almost prohibitive prices, shows that we have passed the line of prudence and reason in restricting the profits of our transportation systems.

"While the tide of wages keeps rising and must be met, if the public is to be saved from the engulfing calamity of a general railroad strike, one group of Eastern railroads is called upon to repair a loss of more than $20,000,000 caused by the great floods in Ohio and Indiana.

"In the light of these and other similar facts it seems plain that the Interstate Commerce Commission should give dignity and strength to the law by a reasonable and fair use of its powers. No good can be accomplished by crippling one of the chief means through which the productive life of the nation is made effective."

New York Evening Mail, May, 1913.

Nowhere in the country is there a sign of public opinion that favors a policy of discouragement or actual hostility to legitimate railroad enterprise. On the contrary, both shippers and the general public desire reasonable treatment of the railroads. It is not merely the falling prices of railroad securities in the stock market that signals the danger of the present iron policy of restricting railroad rates. The refusal of the public both here and in Europe, to invest money in new bonds or other securities of the foremost and best-managed American railroads, save at almost prohibitive prices, shows that we have passed the line of prudence and reason in restricting the profits of our transportation systems.

New York, Munsey's, June, 1913.

The request which some of the railroads have made for a small increase in rates is moderate, indeed, compared to the additions to their payrolls. There would seem to be justification, even to the satisfaction of the most rabid corporation critic, for an increase of rates that would enable them to keep their track and equipment up to the highest standard of efficiency and safety.

New York, The Outlook, December 6, 1913.

As we have repeatedly said, it is a perfectly fair and right thing that the railroads should be allowed to increase their rates, both for freight and passenger, if that is needed in order to insure safety to passengers, the best equipment, provision for future needs within reason, together with just and fair wages for employes. To determine whether the demand is or is not called for by actual conditions is the laborious task of the Interstate Commerce Commission, and it is one of the greatest industrial gains of our time that such a Commission with such power should exist. To quote a passage from Mr. Roosevelt's editorial in "The Outlook" of last July, called "The Living Wage and the Living Rate":

"The Commission is no true servant of the public unless it unhesitatingly raises the rates when justice in the public interest requires such action, and unhesitatingly lowers the rates when this is the course which will ultimately best meet the public needs. Unless the corporation makes money—that is, unless business men are prosperous—there will be no money to give in proper wages for the wage-worker, there will be no money with which to provide for his protection and insure him against loss and damage, and no money wherewith to render proper service to the customers and to the public as a whole. Our purpose is to see that there is a proper division of prosperity."

New York Press, May, 1913.

There are three ways. One is to fail to make improvements, fail to keep up the roadbeds, fail to maintain equipment, fail to serve the interest and guard the safety of the public. That way is criminal. A second is, as wages were advanced when this could be done on increased traffic, to cut them on falling earnings. That way is the very rare way, fought bitterly by labor. Third is to let the public pay. That way has been averted for some time by the Interstate Commerce Commission. But if the railroads' limit has been reached, it may be the necessary way.

New York Press, December 8, 1913.

The plain English of the foregoing railway statistics is that such a record makes for a situation, sooner or later, where there will not be enough tracks, freight cars and passenger coaches to serve the need of the public as the American people have always demanded they must be served. The extreme development of such a situation would mean nothing less than the break down of free and full transportation exchange of the Nation's products between all parts of the country. That would mean crippled mills and factories, marooned farms, imperiled wage earners and harassed consumers.

New York, Puck, May, 1913.

To-day a railroad must buy new and heavier rails, stronger cars, build heavier bridges, install protective devices and expend vast sums for larger terminals to avoid delays to shippers. To get money for these things a railroad, like anybody else, must turn to the man with money to lend and offer him something for it. The man with money to lend, in turn, naturally is going to investigate conditions before he lends his money. And there is no law known to our land which is going to make him go down into his pocket for the railroad and for his fellow man if he does not like the looks of things.

New York Times, May, 1913.

It might seem that there is no good time for the advance of railway rates. Nobody can afford to pay higher rates when times are bad, and when times are good the companies have so much business that they cannot make out a case of poverty. The Commission could not ask for a better opportunity to magnify its office than by showing it is truly a judicious, judicial, and benevolent body holding the scales true between the opposing sides of the railway question.

New York Times, November, 1913.

Another example of the conscienceless attitude of the Government toward public utilities is shown by the attitude of the counsel employed by the Interstate Commerce Commission in the matter of the advance of freight rates. Mr. Brandeis proposes to use the application as a lever for reforming the alleged abuse of interlocking directorates. The railways ask to be allowed to pay their bills, and Mr. Brandeis proposes to listen when they have improved their financial methods in a manner satisfactory to him. It is as though when your tailor sends in his bill you should refuse payment because he does not live with his wife. He ought to live with his wife, and it might be that if his bills were paid he might be better able to do so. But the payment of the tailor's bills and the reform of his morals ought to be dealt with each on its own merits. Nobody would object to Mr. Brandeis's ravaging reforms in their season, but the payment of bills cannot await the process. The Interstate Commerce Commission reports this week that the railways' gross earnings for September increased $17,000,000, and the net fell $5,000,000. The railways are paid by piecework. They are indisputably working harder for less pay. They have pieced out their earnings by borrowing and spending $335,000,000 which must be paid or funded within a year if the railways are to be kept solvent. That the companies can travel this road no farther appears from the economies which they are practicing to the damage of other interests than their own. The railways' contracts for rails this year have decreased seventy-two per cent, car contracts have decreased forty-two per cent, locomotive orders decreased thirty per cent, structural orders decreased twenty-five per cent. The Eastern independent steel companies are running forty per cent capacity, and the larger interests are doing but little better. It is idle to say that the railways are wilfully extravagant when they are not allowed to control the expenditure of their income. They are told how much money they must spend, and how they must spend it. They ask to be allowed to collect the money they must disburse, and they are told that they must reform their morals. They should do whatever they ought, but they must meet their bills at the due dates. Even if Mr. Brandeis were to assist the process of giving them permission it would be months before the order were entered. Meanwhile the outlook is that the larger rates if collected will be upon a smaller volume of business.

In business not Government controlled, prices are raised when business is overwhelming and prices are lowered when dwindling business needs encouragement. The reverse of this customary and approved practice is a novelty whose outcome is obscure. In contempt of counsel Commissioner Marble said to the "Times" that the Commission was striving to make private management of railways profitable. The next day he recalled his words, and Counsel Brandeis's utterance of stern virtue was made. This oppression of the railways is practiced not because Counsel Brandeis is better than other men, or the Commissioners worse, but because of an assumed popular mandate. The people have allowed the oppression to run along on the idea that the railways were too big and rich to be damaged. The people are in the way to discover that the railways can be injured, and that the injury will recoil upon the people.

New York City, Times, January 6, 1914.

If the Interstate Commerce Commission finally decides to add to the revenues of the Eastern railroads by granting them the five per cent increase asked for, several million people in the United States will be fully qualified to say: "I told you so." Everyone who is willing to be quoted, either thinks the roads ought to get the increase, or will get it.

New York Tribune, May, 1913.

The public is interested not only in seeing that the railroad workers receive a living wage. It is interested even more vitally in seeing that the railroads receive a living wage. The railroads must earn enough for their own upkeep. They must earn enough to have a surplus to put into non-dividend paying improvements, for the public demands them. They must earn enough to grow as the country grows.

New York Tribune, June 23, 1913.

For the last four or five years the carriers have been in the unenviable position of being forced to increase their expenses without being allowed to enlarge their income. The cost of everything which they have to purchase—equipment, supplies and labor—has been going up, but they have been restrained by the government from increasing the price of transportation—the only thing which they have to sell.

Federal control has been for them an absolutely one-sided bargain. Congress has passed a law, which public opinion strongly supports, providing for the arbitration of wage disputes between the carriers and their employes. The railroads have gone into many such arbitrations, and the result of each one has been to give the employes a substantial increase in wages. More arbitrations are in sight, and the railroads are virtually asked by the government and the public to go on increasing their expenses of operation while they are debarred by federal authority from seeking the higher returns for service needed to meet the added cost.

That attitude toward the carriers is grossly unjust. It is the duty of the Interstate Commerce Commission to see that the railroads are allowed to earn enough to offset the new burdens constantly put upon them as agencies responsive to governmental supervision. Under the present scheme of regulation the balance has been running steadily and strongly against them. In the interest of fair play it ought to be redressed.

New York Tribune, November 25, 1913.

The old period of hostility and suspicion is passing. When the railroads come forward and point to the fact that added burdens of taxation, increased wages and the advancing cost of supplies and equipment make necessary a larger income than can be earned on the basis of the present rates hardly a voice is raised to dispute the justice of the claim.

A great step forward has been made toward relations of mutual confidence between the public and the railroads since the last proposal to increase rates was unfortunately made. To grow in public esteem and trust the railroads have only to use the surplus returns which they will receive from the higher rates which they seem certain now to get exactly as they now promise to use them—in improving service, increasing safety of travel, enlarging facilities and generally in promoting their own prosperity and that of the communities which they serve. The people are willing to pay for a better and safer service.

New York Tribune, November 28, 1913.

The railroads have perforce been as economical in their management as they knew how to be, and yet operating and maintenance charges and taxes have increased more rapidly than gross earnings. The roads have increased their facilities and improved their service but they earn less.

This process cannot go on. Either railroad earnings, that is to say, their net earnings, must increase as the railroads grow or the growth of the railroads will stop. The real interest of the shippers is not so much that freight rates should not advance as that the railroads should not stop growing. All the prosperity of the country is based upon adequate facilities of transportation. Without adequate earnings there cannot be adequate facilities.

New York City, Tribune, December 22, 1913.

If the Commission admits the need of more mechanical safeguards and greater skill in operation and the public is more and more concerned about making travel safe, another argument is created for treating the railroads fairly in the matter of freight and passenger rates. All-steel cars, the latest block systems and better educated and more responsible engineers and trainmen all cost money, and their cost to the roads ought to come back in the shape of larger earnings. For the last ten years the policy of the government has been to involve the railroads in larger expenditures while forbidding them to increase their income. A much better service for the public has been obtained at the expense of the railroad stockholder. It would be a glaring injustice to go on making the stockholder pay for every improvement in facilities. The only logical complement to a demand on the railroads for safer service is an order giving them the means to furnish it through higher freight rates.

New York, Wall Street Journal, May, 1913.

It sounds plausible to argue from an apparently great increase in the gross amount of dividends paid by the railroads that they are doing well enough, but such argument ignores the vast money investment of the past ten years represented by stock and the conversion of bonds into stock, through re-organization or otherwise. In fine, this pseudo-argument is a convenient way to avoid the fact that the actual return on all railroad capital is declining, and has been declining almost steadily for at least six years. Barring temporary fluctuations, it has probably been declining for a much longer period.

New York World, May, 1913.

If the railroads are compelled by law and by arbitration proceedings to spend more annually, a point must inevitably be reached where the railroads will be justified in seeking fair compensation through higher rates.

New York World, November 25, 1913.

It is for the Government, through the Commission, to do justice. It has assumed the rate-regulating power, and that is a power to increase rates when fairness demands as well as to reduce rates when fairness demands. It is a power which must be so exercised. The country must have railroads and better railroads, and no power of Government can force new capital into the roads or keep old capital there when income has been forced below what can be earned elsewhere.

New York City World, January 4, 1914.

Next in significance to the note of hope that appeared in the telegrams from important business men throughout the country printed in "The World" was the assertion of intimation by many that the one thing now needed to restore confidence is an increase of railroad freight rates.

Rochester (N. Y.) Democrat May, 1913.

The Interstate Commerce Commission has not been friendly to requests of this nature in the past, taking the ground that the rates in operation were sufficient to meet expenses. It cannot, however, fail to take cognizance of the grants of increased wages. Nor can it fail to take cognizance of the fact that something must be done to reassure the investing public, which is certain to fight shy of railroad securities unless the railroads can be placed on a more promising financial footing.

Rochester (N. Y.) Democrat and Chronicle, November 25, 1913.

If the railroads that have asked the Interstate Commerce Commission for permission to increase freight rates five per cent, do not receive an affirmative response, it will not be for lack of evidence to support their claim that conditions demand such an increase.

The demands on the roads in the way of wages, increased facilities and new equipment, are constantly increasing. There is only one way that the railroads can meet these demands, and that is by increasing revenues.

Rochester (N. Y.) Evening Times, May, 1913.

It is public sentiment, the companies having proved pretty clearly the need, that there should be an increase in revenues for the railroads. While there has been an advance in rates in all other kinds of business, the railroads have met greatly increased expenses, without getting consequent revenues in return. The Interstate Commerce Commission, the State lawmakers and the public in recent years sometimes have been unduly antagonistic to the railroads. It is time a halt was called and the railroads given fair treatment.

Rochester (N. Y.) Post Express, May, 1913.

According to the Commission's own figures, the operating income of Eastern railways earning more than ten million dollars a year declined in 1911, $32,968,341, although the mileage included was five hundred greater than in 1910. The conditions outlined will be cited by the railway managers in their argument for the advance in rates. The Commission may wisely give them careful consideration, for upon the prosperity and consequent advancement of railway interests depends in large measure the business activity of the country.

Rochester (N. Y.) The Post Express, June 2, 1913.

It is hoped that the country has seen its last "fight" over freight rates. As Professor William Z. Ripley, of Harvard, has said, it is desirable that shippers and the public shall appreciate the burdens of cost which have been and are being laid on the railroad companies, the task which must be performed by the companies in order to meet their obligations to the public in the matter of equipment and service and the allowance which should readily be made for the greater things demanded by the enormous growth of agriculture, commerce and industry.

Rochester (N. Y.) Times, June 17, 1913.

There is a growing public opinion that legislation hostile to or tending to hamper the railroads has already been carried quite far enough and that if continued will be a detriment not only to the railroads but also to shippers and the public in general.

Rochester (N. Y.) Times, November 28, 1913.

Not only have legitimate expenses increased and the railroads added to their investments and therefore to their interest charges in the last few years, but it is certain that they will have to make great additional expenditures in order to handle business in the next few years. Double tracks, safer signals, larger locomotives and cars, heavier rails and many other articles of new equipment must be purchased. These expenditures can only be met by bond and stock issues and the interest and dividend charges must come from increased rates.

Rochester (N. Y.) Times, December 1, 1913.

The proposed general advance of five per cent in rates that this increase would afford, would only cause the slightest disturbance to the commercial world and would be of considerable benefit to the development of their properties. A leading railroad official estimates that the increase asked would add between $35,000,000 and $40,000,000 to the revenues of the 52 railroads involved.

Many of the largest shippers have endorsed the application of the railroads. It is obvious that the railroads must earn a fair percentage on their investment in order to keep in condition to handle the nation's business. The legitimate, absolutely necessary expense of the roads have increased so much in recent years that there is a general public feeling they are entitled to a rate increase to balance these higher expenditures.

Syracuse (N. Y.) Herald, December 30, 1913.

The hope seems to be pretty general that early in the New Year the railroads will receive a gift from Uncle Sam—or, more specifically, from the Interstate Commerce Commission—in the shape of a permit to increase their freight rates five per cent.

Several strong arguments have been offered in support of this plea, and some of them have already been examined in these columns. The strongest of all, however, is found in the record of wages increases forced upon the railroads during the past three years. For the fiscal year ending July 1st last, the Eastern railroads paid out in wages and salaries the colossal sum of $506,000,000. The really significant thing is that this represented an increase of $50,000,000 in round numbers, as compared with 1910. The figures are official. Upon the New York Central alone the wage increase imposed a burden of about $10,000,000.

We need go no further for reasons why the Eastern railroads are entitled to that New Year's gift.

Syracuse (N. Y.) Post-Standard, December 8, 1913.

The Eastern railroads have asked the Interstate Commerce Commission to allow them to increase their freight rates five per cent. They asked for an increase a few years ago and were denied. Since then their expenses have increased greatly and there must be more revenue or the roads will be forced not only to curtail needed improvements, but to institute drastic economies which will seriously hamper their service to the public.

In view of the great increase in cost in the period since the Commission last heard the railroads' request for permission to raise their rates, and the decrease in net income, the Commission will hardly decline this time to allow the railroads to make their charges more nearly commensurate with their needs.

Troy (N. Y.) Times, May, 1913.

There are distinct indications of a public awakening to the fact that it is possible to kill the goose that lays the golden eggs of prosperity. One of the ways is to deal unjustly with the railroads and prevent them from expanding their facilities to meet the public needs. This phase of the subject is receiving thoughtful attention, an example of which is furnished by the action of the New Hampshire Legislature in directing the preparation of a bill that shall permit the Boston and Maine Railroad to raise rates above the limit now fixed by the law of that State.

Utica (N. Y.) Herald-Dispatch, November 28, 1913.

The case the railroads are making out in this hearing is vastly stronger and more compelling than the presentation of facts made when the last application for a general increase of rates was denied. The figures give proof of imperative need. A refusal of the Commission to grant the relief prayed for would be a shock to the country and a disaster to its greatest business interest.

Utica (N. Y.) Observer, May, 1913.

Much railroad stock is held by people of small means who have purchased it as an investment. It has often been said that one of the big railroad systems of this country is owned by widows, and they depend upon the dividends of from four to six per cent for their support.

Utica (N. Y.) Press, November 26, 1913.

That a dollar does not go as far as formerly, those who have had experience confidently assert. It is conceded that the necessaries of life cost more than formerly. The railroads have practically only two sources of income, passengers and freight. If they have to pay out more, they must make some arrangement for taking in more. There are two ways of retrenchment; one is to let the rolling stock deteriorate and spend nothing for new engines or cars and as little as possible for repairs or to cut operating expenses, which means cutting wages. It would seem on the face of it as if the railroads had a very good argument.

Watertown (N. Y.) Standard, January 9, 1914.

If there could be any doubt concerning the concession of a five per cent increase in freight rates to the Eastern railroads the action of the Illinois Manufacturers' Association in favor of the request should settle the matter favorably. The association had been on record opposing the increase. On Monday, it sent urgent letters to its 15,000 members requesting that they do their utmost to see that the increase was granted.

Railroads are the most enterprising corporations in the country. They pay the highest wages. When they can get money they anticipate the needs of the communities they serve. A railroad running at a loss or unable to secure capital for extensions and better facilities cannot give the shipper good service. For years expenses have been increasing through safety first efforts and higher wages.

PENNSYLVANIA.

REPLIES OF A FAVORABLE CHARACTER.

Mayor S. H. Walker of Altoona. (Population 52,127.)

(1) Quite a number of local business men in the community who are shippers on the railroads have volunteered the opinion in casual talks, that owing to the increased demands made upon the railroads by legislation of various kinds in recent years, the increase asked for should be granted by the Commission. Altoona is distinctly a railroad town, and local business men are af-

fected just about as much as railroad employes by the prosperity or adversity of the roads.

(2) I should say that if the increase is granted it should be promptly, leaving all minor matters to be settled later.

Secretary, George H. Mosser, Altoona Chamber of Commerce.

At a meeting, held on December 10, 1913, the Board of Directors of the Altoona Chamber of Commerce endorsed the five per cent increase asked for by the railroads. The brief formal motion which followed the complete discussion of the subject is as follows:

Resolved, That the Chamber of Commerce of Altoona, Pennsylvania, endorsed the proposed five per cent increase as in railway freight rates.

J. K. P. Fenner, Burgess of Ashley. (Population 5,601.)

(1) Yes, this being largely a railroad town benefited by the increased wages to railroad employes, they naturally feel some allowance should be made the companies to meet these additional payments.

(2) Yes, decidedly so.

Mayor James M. Yeakel of Bethlehem. (Population 12,839.)

(1) Yes.

(2) We believe it should be promptly settled one way or the other. Agitation and suspense never pay.

Thomas Scott, Chief Burgess of Bristol. (Population 9,256.)

(1) The consensus of opinion in Bristol appears to be that the increase in wages and taxes combined with decreased earnings, appear to give the railroads an entire justification in making their claim.

(2) Regulation by Congress controlling the issuance of railroad securities, if sanely carried out as a protection to the investor against fraudulent issues or efforts to defraud stockholders, would be a wise reform measure, but to confine legislation of this character to its proper sphere is a difficult proposition. It appears that we are already suffering from a plethora of laws.

Mayor of Chester. (Population 38,537.)

(1) Sentiment divided, but resolutions have been adopted by the Board of Trade vigorously approving the increase.

Secretary, Neil B. Sinclair, Chester Board of Trade. (Population 38,537.)

At the annual meeting of the Chester Board of Trade, held on January 15, 1914, the following resolutions endorsing the action of the transportation companies in requesting an advance of five per cent in freight rates, was adopted and original copy forwarded to the Interstate Commerce Commission:

Whereas, it has been brought to the attention of the Board of Trade of Chester and vicinity that the Transportation Companies have applied to the Interstate Commerce Commission for an advance of five per cent in freight rates, and,

Whereas, The Board of Trade of Chester and Vicinity believes that the granting of the proposed five per cent increase to the Transportation Companies would be a source of stimulation to the business interests of the country and particularly to those of Chester and Vicinity, and

Whereas, The Board of Trade of Chester and Vicinity is firmly convinced that Railroad prosperity and national prosperity go hand in hand, and

Whereas, The Board of Trade of Chester and Vicinity believes that in granting the five per cent advance in freight rates, the small increase requested is not sufficiently heavy to work a hardship or place a burden upon any of the business interests of the country and particularly those of Chester and Vicinity and also that the smaller retail merchants will not have cause for lament if the increase is granted, and

Whereas, The Board of Trade of Chester and Vicinity recognizes the fact that the Transportation Companies are and have been for some time put to considerable extra expense in every department by reason of recent legislation necessitating their supplying themselves with more expensive equipment and modern safety appliances and that the demands for increased remuneration are constantly growing more insistent, therefore

Be It Resolved, That the Board of Trade of Chester and Vicinity do and hereby does heartily and cordially endorse the action of the Transportation Companies in requesting this increased freight rate of five per cent made to the Interstate Commerce Commission, and

Be It Resolved, That this resolution be adopted and spread upon the minutes and that copies of this resolution be properly attested and certified and forwarded to the Chairman of the Interstate Commerce Commission; Mr. Charles Bye, Secretary of the Charles Warner Co., Wilmington, Delaware; Senator William C. Sproul, Chester, Pennsylvania and Mr. E. G. Ward, President of the "Railway World," Philadelphia, Penna.

R. J. Hardy, Burgess of Carnegie. (Population 10,009.)

(1) The sentiment of the business men in this community seems to be in favor of the proposed increase in freight rates, not because they think such increase to be necessary, but because it is believed that it would bring about a resumption of activities in business if the railroads would commence to buy their supplies on the usual scale, and it is felt that the railroads will not do this unless the increase is granted.

(2) I think that the sentiment is that the increase should be promptly granted, leaving the other matters out of consideration for the present.

C. J. Klein, Chief Burgess of Catasauqua. (Population 5,250.)

(1) Yes. A personal canvass of the larger shippers in this borough, representing a diversity of industrial and embracing the largest investment of. capital, gives an affirmative answer to your question. They believe that the increase in rates would improve the trade conditions in this section of the country.

(2) The sentiment is favorable to a prompt granting of the increase, recognizing, however, the probable necessity of readjustments.

Mayor of Columbia. (Population 11,454.)

(1) I have spoken to quite a few gentlemen connected with our large corporations informally, and I find they do not object to the rate increase, but that the railroads be compelled to give adequate returns by increased efficiency in the transportation of the freight. It is the consensus of opinion in this section that if the increase is granted, it will fall on the public, but that the railroads in turn will then go into the market with large orders for equipment, etc., and thus stimulate business, giving employment to more labor.

(2) Being favorable to the increase, public sentiment seems to think the advance should be granted, leaving readjustments to be made in the future.

E. C. Sithrich, Pres. Chamber of Commerce, Coraopolis. (Population 5,252.)

(1) A personal interview with the majority of manufacturers in this community reveals the fact that they are pronouncedly in favor of granting the increase.

(2) It is my personal opinion, judging from general conversation with a number of our townsmen, that the answer to your question No. 2 should be, Yes.

Secretary, P. S. Weber, Dubois Business Men's Exchange. (Population 12,623.)

Our Exchange has taken no action either for or against the five per cent freight rate increase. As to the attitude of our members, I have interviewed fifteen of our heaviest shippers and receivers of merchandise, thirteen of whom express themselves as being perfectly satisfied that the Commission would do the fair and the just thing and the remaining two, favor the increase.

Mayor W. J. Stern of Erie. (Population 66,525.)

(1) It is my opinion that the business men of our city, who are of the thinking element, are fully in sympathy with the railroad companies in their demand for the right to increase their rates. In talking with these business men I find that they all agree to the increase inasmuch as the railroad companies are paying higher rates of wages than formerly and paying higher prices for materials necessary for the upkeep of their property and that it is absolutely unfair that they should not be permitted to make an advance commensurate with the increased expenses.

Secretary, Frank W. Dillon, Erie Board of Trade.

Official action on railway freight rates has not been taken by the Erie Board of Trade, but is contemplated for the next meeting when a fair expression of opinion can be obtained from the assembled members. I have been interested in hearing the sentiments voiced by the 400 members, many of whom are proprietors and general managers of large shipping establishments, also professional and business men depending considerably on the prosperity of the city for lucrative business.

Their opinions differ largely upon two points. Some believe that the Interstate Commerce Commission is able and will grant the railroads any concessions that must be given to make business active. Others think that the railroads should be granted the increase upon proof that they require the same and that the grant will not be followed by requests for additional increase. The trend of opinion is that the railroads should not be crippled and prosperity of business and manufacturing stopped if a reasonable increase will continue conditions on a satisfactory basis.

Frank Smiley, Chief Burgess of East Stroudsburg. (Population 3,330.)

(1) From personal talks I have had with some of our leading business men they seem to be of the opinion that if a five per cent increase is necessary to make a reasonable return on investments, it should be granted.

(2) There is quite some difference of opinion on this question, but I think the majority are of the opinion that the carriers should first show that they need the increase for return on investments.

Mayor of Farrell.

(1) I have talked with a great many business men in regard to the proposed increases in freight rates and I feel safe in saying that it is their opinion such increase is absolutely necessary. They believe it would bring about a great business revival.

(2) Yes.

Secretary, E. S. Keay, Greensburg Board of Trade. (Population 13,012.)

While our organization has never acted upon this question, the writer has talked to some of our local shippers and finds that some of them favor the increase as a step towards restoring the prosperous condition in shops and mills. Nearly everyone to whom the writer has spoken on the subject thinks that the increase should be granted if the railroads can show the proper necessity for it, and would, I think, accept such an award by the Commission with favor. In other words, there is no evidence of opposition to the railroads as the people here want them to have sufficient revenue to make them prosperous, feeling that the general welfare of the community is very largely affected by the railroads' prosperous condition or the reverse. The writer personally feels that a complete poll of the business men of the community would result in a verdict favorable to the railroads.

J. I. Shaff, Burgess of Indiana. (Population 5,749.)

(1) Yes.

(2) Yes.

J. L. Bardine, Burgess of Juniata. (Population 5,285.)

(1) It is the sentiment of the business people of this city that the increase in freight rates should be granted, the opinion being that what is good for the railroads is good for the people.

(2) Yes.

Mayor John E. Reynolds of Meadville. (Population 12,780.)

(1) I believe beyond question, that the business interests are in favor of the increase of five per cent in freight rates. The prosperity of this community depends largely upon the prosperity of the railroads which are entitled to a fair profit.

(2) If the increase is to be granted, it should be at once and give business an early realization of the advantage.

E. M. Boynton, Manager, Meadville Chamber of Commerce.

The following letter sent to the Interstate Commerce Commission, sets forth the attitude of the Meadville Chamber of Commerce on the petition of the Eastern carriers to increase their freight rates five per cent:

To the Honorable Interstate Commerce Commission:
Washington, D. C.

Dear Sirs:

The Meadville Chamber of Commerce, of Meadville, Penna., representing the manufacturing and business interests of this city, recognize the fact that the eastern railway lines have had to materially increase their expenses in the matter of increases in wages to employes, as well as improvement in equipment, for the benefit of the public at large, and we earnestly recommend that the five per cent advance which the railroad lines have asked for, of your honorable body, be granted to them. We believe that the railroad rates are lower than conditions warrant, and the five per cent advance amounts to very little to the individual, but means a great deal to the railway lines, and we recognize the fact that their prosperity means a great deal to the general business interests of the country.

Yours very truly,
The Meadville Chamber of Commerce,
E. P. Cullum, President.

Attest:
E. W. Lawrence, Secretary.

A. G. Dunlop, Burgess of Monessen. (Population 11,775.)

(1) While the question of increased freight rates has never been openly discussed by our Board of Trade, in talking the matter over with business men it appears to be the prevailing opinion that it is only fair to the transportation companies that they should be permitted to increase their freight rates in proportion to the increase of other lines of business.

(2) Our people seem favorable for leaving for future consideration such individual rate adjustments as may be made necessary by the increase and also leaving for future consideration, as Congress may see fit to deal with it, the question of National regulation of railway securities.

Mayor of Mount Pleasant. (Population 5,812.)

(1) Doubtless our business men would favor such increase from a sense of fairness, but they are much disturbed over the failure of the railroads to give our town a passenger train service.

Theodore Heysham, Secretary, Norristown Chamber of Commerce. (Population 27,875.)

At a meeting of the Board of Managers of the Norristown Chamber of Commerce, held on January 26th, the matter of permitting the railroads to increase their freight rates in the manner indicated in their recent petition to the Interstate Commerce Commission, was considered, and it was on motion ordered that the proposed advance be recommended for endorsement at the next regular meeting of the Chamber of Commerce in February. This recommendation, I think, will be respected by the body and unanimously endorsed.

H. B. Miller, Burgess of North Braddock. (Population 11,824.)

(1) Yes. If my constituents were called to a mass meeting and this subject presented to them and truthfully explained by one they had confidence in, their answer would be as above, Yes.

(2) Yes.

Secretary, Ira L. Wales, Oil City Chamber of Commerce. (Population 15,657.)

At a meeting of the Board of Directors of this organization, held on January 6, 1914, it was moved, seconded and carried that the sentiment of the Board favored the Interstate Commerce Commission granting the application of the railroads for a five per cent increase in freight rates, and that if necessary, a representative of the Chamber of Commerce would go to Washington to testify to that effect.

Mayor Rudolph Blankenburg of Philadelphia. (Population 1,549,008.)

(1) Yes! The high cost of living affects railroad companies not only in increased expenses for materials, but also in increased payrolls.

(2) The increase in freight rates should be granted promptly. This is not an academic question, but one of sound business sense.

Secretary, Wm. R. Tucker, Philadelphia Board of Trade.

The following abstract is from the proceedings of a meeting held by the Philadelphia Board of Trade on May 19, 1913, during which the attitude of the Board in relation to the proposed five per cent increase in freight rates was recorded:

The railroads covering the Eastern Trunk Line territory have filed an appeal with the Interstate Commerce Commission for permission to advance freight rates five per cent. This territory produces an annual freight revenue of about $800,000,000, so that an increase of five per cent would mean an increased revenue to the railroads of about $40,000,000.

President Rea, of the Pennsylvania Railroad, in an open letter, claims that on that system east of Pittsburgh new legislation in five and a half years has cost his company $11,000,000; that the New Jersey grade crossing law will cost his company, in that State alone, $60,000,000; whilst full crew laws, railroad valuation laws, etc., will cost untold millions more.

Other railroad systems have been similarly affected in proportion to their extent.

Engineers and firemen have had their wages raised; conductors and trainmen are demanding increased pay; the public demands safety appliances and improved facilities with comforts and conveniences; all of which become added costs to the railroads but unproductive in the way of revenue.

Legislation and prosecution by the Federal Government, and legislation and prosecutions by the various State Governments, do not diminish, and it is becoming apparent that the natural timidity of capital is being affected by all these things in combination, and that world-wide investors are drawing their purse strings to see what will happen.

The letter of Mr. Rea breathes such a spirit of tolerance, along with acquiescence in and intended obedience to law, as induces a suggestion that all members of our Board should give it careful reading and consideration. It should further be borne in mind that the great railroad systems of this country are such tremendous consumers of mill, foundry and factory productions that when their purchasing power is reduced it reacts on the people, curtails employment, reduces consumption, thus affecting the masses and those least able to bear it.

On the other side of increased freight rates is the question as to what effect it may have on particular sections or on particular commodities, and to what extent some railroads have been improvidently capitalized and imprudently managed and so not rightfully entitled to the relief an increased earning power would bring.

Your committee is of the belief that the conditions of the transportation systems of the country must be put into shape to handle freely and promptly the trade and commerce of the nation; that the prosperity of the people is absolutely dependent on the prosperity and ability of the transportation companies to care for them and their business; and your committee, therefore, believing that the greater good will inure to the greater number, by permitting the railroads to increase their rates on freights to the extent of five per cent, recommends that the executive officers of the Board of Trade be empowered to address the Interstate Commerce Commission to the effect that they see no reason for objecting to such advance.

Secretary, Emil P. Albrecht, Philadelphia Bourse.

As other organizations whose membership coincides very largely with the stockholders of the Bourse, no action has been taken by our organization with respect to the proposed advance in freight rates, as we have felt that it was not necessary to duplicate the work of other organizations of this city, such as the Chamber of Commerce and the Board of Trade, along these lines.

Secretary, N. B. Kelly, Philadelphia Chamber of Commerce.

The following resolutions have been passed in November, 1913, by the Philadelphia Chamber of Commerce relative to the proposed increase of freight rates in Official Classification territory:

Resolved, That the Philadelphia Chamber of Commerce realizes that it is of the utmost importance to the business interests of our country that the railroad companies should be allowed to make charges which will permit of proper maintenance and extensions and provide adequate return on invested capital.

Secretary, Logan McKee, Pittsburgh Chamber of Commerce. (Population 533,509.)

The following resolutions with reference to the proposed increase in freight rates in Official Classification territory were passed by the Pittsburgh Chamber of Commerce on June 12, 1913:

Whereas, The railroads in what is known as the Official Classification Territory have requested from the Interstate Commerce Commission permission to advance their freight rates five per cent, and

Whereas, The railroads interested claim that they are not now receiving sufficient revenue to enable them under present conditions to perform service adequate to the needs of the commerce of the country, therefore

Be It Resolved, That the Chamber of Commerce of Pittsburgh hereby suggests to the Interstate Commerce Commission that they grant the railroads within the Official Classification Territory permission to advance freight rates, upon presentation by representatives of the railroads of the facts and figures which will prove conclusively the necessity of such increase in revenue, in order to provide adequate service and equipment to the shipping public, and, further

Be It Resolved, That the Chamber of Commerce of Pittsburgh respectfully calls attention to the contention of the Pittsburgh shippers that the prevailing rates on coal, coke and ore shipped into and out of the Pittsburgh District are unreasonable and excessive as compared with other districts and urges that a thorough investigation of the rates on these commodities be made following which rates on these commodities be fixed fair alike to the railroads and the shippers.

E. T. Messick, Secretary, Merchants' Protective Association of Pottstown. (Population 15,599.)

The following resolution has been passed by the Merchants' Protective Association relative to the proposed increase of freight rates in Official Classification territory:

Resolved, That the Merchants' Protective Association of Pittston, Pa., records itself as in favor of the application of the railroads for a reasonable increase in freight rates; that in our opinion such increase is necessary on account of business conditions and increased cost of operation, and that it is advisable because it will result in better railroad accommodations, more railroad construction and safer transportation; and that the Secretary be directed to communicate this Resolution to our Congressman and to the Hon. E. F. Clark, Chairman, Interstate Commerce Commission.

Albert P. Rodems, Burgess of Rankin. (Population 6,042.)

(1) The sentiment of the business men of this borough is in favor of granting the carriers in Official Classification territory an increase of five per cent in their freight rates.

(2) Public sentiment desires it to be promptly granted. In case of favorable action by the Commission, the business men of this vicinity are of the opinion that the railroads would increase their rolling stock, etc., which would be of great benefit to this immediate locality.

E. M. Campbell, Chief Burgess of Ridgway. (Population 5,408.)

(1) Yes, owing to increase of wages, demands for better equipment, grade crossings, etc., the five per cent increase is a just request. It is the opinion of the business men of this community that it would be a great stimulus to trade.

(2) The sooner the better for both railroads and business.

Secretary, Sharon Civic Association. (Population 15,270.)

The following resolution regarding the petition of the railroads in Official Classification territory to increase their freight rates five per cent, has been passed by the National Civic Association:

Resolved, That the Sharon Civic Association is heartily in favor of favorable action by the Interstate Commerce Commission on the application of the railroads of the Central and Eastern Classification Territory for an increase of rates, and we believe it would be advantageous to the country if such favorable action could be taken with the least possible delay.

We believe the proposed advances are justified and are necessary, in order to provide sufficient revenues for the proper maintenance of and additions to tracks and equipment to the end that the railroads may be sufficiently and properly equipped to render better service to meet the increasing demands of commerce in a manner that is now impossible, and to safeguard human life of both passengers and employes, and to enable them to maintain, if possible, the rates of compensation to their employes which have so materially advanced in recent years.

That the Secretary of this Association be instructed to forward a copy of this resolution to our Representative in Congress, to the Senator from the Western end of the State and Mr. E. E. Clark, Chairman of the Interstate Commerce Commission.

L. L. Anderson, Secretary, Sharon Retail Merchants' Exchange. (Population 15,270.)

At the regular meeting of the Retail Merchants' Exchange, held on January 17th, your communication was read and the Exchange reported as being favorable to the increase of railway rates.

Mayor Fred Wigfield, Chief Burgess of Steelton. (Population 14,246.)

(1) I have made a brief canvass of the most important business men of our town and all but one have expressed their desire that the increase should be granted on the grounds that certain laws have increased the expenses of the carriers.

William G. Gordon, Chairman, Transportation Committee, Swissvale Board of Trade. (Population 7,381.)

Your letter was referred to the Transportation Committee of the Board of Trade for reply and as there will not be a meeting of the Board of Trade for some weeks I would inform you that the committee is unanimously of the opinion that the advance should be granted as we think the depression in our local industries is largely due to the inability of the railroads to buy needed material.

Burgess, Titusville. (Population 8,533.)

(1) It is my belief that the sentiment of the business men of our city is in favor of

granting the carriers in Official Classification territory an increase of five per cent in their freight rates. However, I cannot make this statement officially, but I can say that the writer is heartily in favor of permitting this advance.

(2) Yes.

Secretary, Union City Chamber of Commerce. (Population 3,684.)

The following resolution, passed by the Chamber of Commerce of Union City, indicates the attitude of its members towards the proposed increase of five per cent in freight rates:

> Resolved, That the Union City Chamber of Commerce records itself as in favor of the application of the railroads for a reasonable increase of freight rates; that in our opinion such increase is necessary on account of business conditions and increased cost of operation, and that it is advisable because it will result in better railroad accommodations, more railroad construction and safer transportation; and that the Secretary be directed to communicate this Resolution to our Congressman and to the Hon. E. E. Clark, Chairman, Interstate Commerce Commission.

J. H. Ottaway,
Secretary.

R. D. Warman, Burgess of Uniontown. (Population 13,344.)

(1) It is the hope of our people that the increase of five per cent will be granted. Railway prosperity will increase our country's business.

Mayor C. S. Knobb of Warren. (Population 11,080.)

(1) Practically all parties that I have met and discussed this matter with, are in favor of the five per cent increase.

(2) Yes.

REPLIES OF AN UNFAVORABLE CHARACTER.

Mayor Spencer M. DeGolies of Bradford. (Population 14,544.)

(1) I believe the Interstate Commerce Commission is a body duly constituted to take charge of this question and that they can, and will do so, to the best interests of the country. As for our merchants, I may not speak with authority for them, but I think that as a whole, they are of the opinion that rates are higher now than they ought to be.

Hobart Callahan, Chief Burgess of Clearfield. (Population 6,851.)

(1) I do not think that there should be any increase in freight rates.

Mayor of Easton. (Population 28,523.)

(1) No.

Mayor of Greenville. (Population 5,909.)

(1) No.

H. M. Stokes, Burgess, Hanover. (Population 7,057.)

(1) The sentiment here is divided with the majority against granting the increase.

D. G. Crawford, Secretary, Homestead Business Men's Association. (Population 18,713.)

Our Association has gone on record protesting against the increase of five per cent in freight rates.

Mayor of Johnstown. (Population 55,482.)

(1) No.

Frank R. Diehl, Secretary, Lehighton Business Men's Board of Trade. (Population 5,316.)

On January 23d, the members of this Board passed a resolution opposing the proposed advance of freight rates.

Mayor of Lockhaven. (Population 7,772.)

(1) No; our business men do not want an increase in railway rates.

Mayor of Mount Carmel. (Population 17,532.)

(1) No.

(2) No.

E. H. Ward, Burgess, New Brighton. (Population 8,329.)

A number of our manufacturers and merchants with but one exception have in conversation with me expressed the opinion that they consider the present rate for this valley high enough considering the service rendered.

Mayor of Northampton. (Population 8,729.)

(1) I believe I am expressing the sentiment of our business men and corporations in this community, when I say they are not in favor of an increase in freight rates.

Mayor of Shamokin. (Population 19,588.)

(1) No.

Mayor of Tamaqua. (Population 9,462.)

(1) No.

Jacob Miller, Burgess of Wilkes-Barre. (Population 67,105.)

(1) To the above question, my answer is no, and I think this expresses the general sentiment in our neighborhood.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Wm. J. Fink, Bethlehem Industrial Commission. (Population 12,837.)

No action has been taken by this organization for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, George L. Dobie, Bradford Board of Trade. (Population 14,544.)

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Alford A. Wood, Butler Business Men's Association. (Population 20,728.)

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, C. N. Berntheizel, Columbia Merchants' and Manufacturers' Association. (Population 11,454.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Mayor, East Pittsburgh. (Population 5,615.)

(1) The small business men in our community do not favor the increase because of the necessity of increasing the selling price, which will put them to still greater disadvantage with the large stores of the city of Pittsburgh. The large manufacturing industries of our community do not seem to be antagonistic to the proposition.

(2) If the increase is to be granted, at all, I believe the sentiment would be to grant it promptly and allow details to be worked out later.

Secretary, A. M. Howes, Erie Retail Merchants' Association. (Population 66,525.)

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

M. J. Boyle, Secretary, Freeland Board of Trade. (Population 6,197.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

John H. Royal, Mayor, Harrisburg. (Population 64,186.)

(1) So far as I know there has never been any public expression through the newspapers on freight rates being increased and I am therefore unable to answer your questions.

Secretary, Chas. E. Dasher, Asst. Secy., Harrisburg Board of Trade.

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, W. L. Stewart, Johnstown Chamber of Commerce. (Population 55,482.)

No action has been taken by this Association for or against the five per cent increase in Official Classification territory, in freight rates.

Secretary, C. H. Wanless, Lancaster Chamber of Commerce. (Population 47,227.)

No action has been taken by the Chamber of Commerce for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Wm. P. Hoppins, Lockhaven Board of Trade. (Population 7,772.)

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

George P. Hancock, Chief Burgess, Mount Carmel. (Population 17,532.)

(1) Your request has been referred to the Merchants' Association.

Chairman, Wm. H. Garver, Transportation Committee, Manufacturers' Association, New Brighton. (Population 8,329.)

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, R. McWhite, New Castle Board of Trade. (Population 36,280.)

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, F. E. Marshall, Philadelphia Commercial Exchange. (Population 1,549,008.)

The following quotation from the annual report of the Transportation Committee of the Commercial Exchange of Philadelphia expresses the attitude of that organization regarding the proposed increase of five per cent in Official Classification territory:

"No action has been recommended by your committee upon the general question of the application by the carriers to the Interstate Commerce Commission for an advance of five per cent in freight rates, your committee believing that the carriers are able to justify their demand for higher rates, the Commission will not deny them."

Secretary, C. W. Summerfield, Philadelphia Merchants' and Manufacturers' Association.

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, William P. Young, Pottstown Commercial League. (Population 15,599.)

No action has been taken by the League for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, D. J. McDermott, Reading Board of Trade. (Population 96,071.)

No action has been taken by the Reading Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Mark K. Edgar, Scranton Board of Trade. (Population 129,867.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Fred F. Bennett, Washington Board of Trade. (Population 18,778.)

While personally in favor of the increase, it has not been approved officially by our organization. I believe the railroads should endeavor to work in harmony with the Interstate Commerce Commission and that they should recognize they are quasi public corporations existing by reason of public franchise and paid by the public.

Secretary, A. G. Potter, Waynesboro Board of Trade. (Population 7,199.)

No action has been taken by this Board of Trade for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, R. W. Ferrel, Wilkes-Barre Chamber of Commerce. (Population 67,105.)

No action has been taken by this Chamber of Commerce for or against the five per cent increase in freight rates in Official Classification territory.

PENNSYLVANIA EDITORIAL COMMENT.

Altoona (Pa.) Times, November 14, 1913.

It cannot be that those who oppose higher rates believe that the wages of railroad employes should be reduced. Yet during the year 1912, the railroads paid for labor 44.17 per cent of their total revenue, thus taking out of their earnings a large slice which is more likely to increase than decrease.

During 1912 the railroads paid for fuel and oil 8.93 per cent and for materials and supplies 14.06 per cent of their total gross earnings. Shall the reduction be made here? Could reductions be made in the prices of the materials used by the railroads, and still have the manufacturers of those materials uphold their present wage scale? In addition to the 44.17 per cent paid direct to labor by railroads, we find here another 22.99 per cent, in which a large portion is labor cost. In the cost of oil and fuel, for example, the price of labor represents 70 per cent of its value.

For loss and damages the railroads paid 2.20 per cent of their earnings during 1912. Possibly a reduction in this might be brought about, but to do so would mean that accidents must be prevented and the prevention of accidents means a still further outlay for improved equipment.

During 1912 taxes consumed 4.21 per cent of railroad earnings. Shall a reduction be made in this item? Will even the enemies of the railroads suggest that their taxes be reduced?

These items make up a total of 73.57 per cent of the gross earnings and are expended for operating expenses and taxes.

The balance of the earnings is divided for betterments, 3.75 per cent; dividends, 4.84 per cent; rents of leased roads, 4.41 per cent and interest on funded debt, 13.43 per cent.

If a reduction is made in the cost of betterments, it is up to the Commission or somebody else to show how the increased demands upon the transportation lines may be met at less cost than at present. If dividends are reduced, it must be shown who will invest in railroads the capital necessary to maintain them. Rents for leased roads might be cut by buying the roads, but who will furnish the money to pay interest? Interest on the funded debt can be cut by reducing the debt, but where will they get the money to reduce the debt?

Perhaps there may be a good reason for prohibiting an advance of freight rates, but there are few who will deny that the railroads require more money in order to carry on their work, or must effect a great saving in some of their present expenses. It is only fair that those who oppose the advance of five per cent asked by the railroads show how the desired result may be accomplished in some other manner.

Beaver Falls (Pa.) Tribune, December 19, 1913.

While the companies have largely increased their revenues in recent years, their expenditures have grown so much faster that net operating income of 1913 was actually less by over $16,000,000 than it was in 1910, notwithstanding that in the intervening period the railroads had put more than $650,000,000 of new money into their properties.

It is unnecessary to point out what will be the consequence if such a course is persisted in for any considerable time. First will come a reduction or suspension of dividends, so affecting the credit of the companies that it will be impossible to raise the money desired for improvements and after that will come bankruptcy. This is a contingency that cannot be viewed with equanimity and the mere possibility of it ought to give weight to a popular demand that the railroads shall be treated with the same degree of fairness to which every one, large or small, is entitled.

Bradford (Pa.) Era, September 22, 1913.

The conservative citizen must reach the conclusion that it is better for the people to be safe than sorry; that it is preferable to have an assurance of good service rather than to stand in danger of a transportation breakdown. There are strong evidences that if present ability of the roads to handle a rapidly increasing freight business is to be maintained, there must be extensive additions made to their equipment, entailing an enormous outlay for new motive power and rolling stock, improved equipment, track extension and an increased payroll.

Steam railroads in 1912, it is well known, had the smallest listings of new securities in ten years, while non-railroad corporations had the largest. Realizing this, the practical condition of declining credit cannot be disputed. Many of the prominent business organizations of the country have passed resolutions favoring or deciding not to oppose higher freight rates by means of which the Eastern roads will be enabled to provide a better and more adequate service. There is a strongly apparent need for increased railroad transportation facilities, and the shipping public should be willing to pay what is legitimately necessary to obtain them. A prominent business man of St. Louis voices a logical sentiment when he declares that "thousands of shippers have come to realize that their business is prosperous only when the railroads are prosperous and any slight increase in freight rates which they might have to pay would soon be lost sight of in the enormous increase in the profits of their business which this general prosperity would bring about."

Harrisburg (Pa.) Star Independent, January 20, 1914.

The railroads have long deferred contemplated expansions of their lines, the purchase of new equipment beyond their actual hand-to-mouth requirements and the making of repairs save those which are absolutely necessary. This has been because they have not been able to float new bond issues to provide funds for such developments except at rates of interest which are almost prohibitory.

If the five per cent increase in freight rates that is asked for, be granted by the Interstate Commerce Commission, it would increase the railroads' net earnings, which naturally would make railroad securities more attractive to investors. The result of this, it is logical to assume, would be that the market for railroad securities would be improved and that the railroads would be able to sell new stocks and bonds at interest rates lower than they now are compelled to offer. In other words the railroads with five per cent more revenue from their freight hauling should be able to show investors that railroad securities are commensurably improved as mediums for investment and thus obtain the money for the long delayed extensions and betterments. * * *

The railroads will be ready to make the repairs and replacements and also extensions as soon as they can get the money at reasonable rates, and a tremendous amount of the back work has accumulated. When the railroads begin letting the contracts for these things, it will mean a wonderful amount of business for the car builders, locomotive manufacturers, bridge constructors, rail makers and scores of allied industries. In fact, as Mr. Coombs has said when the railroads begin an aggressive campaign of expenditures for improvements and betterments, everything else is likely to start to boom in manufacturing and business circles.

Let's give the railroads that five per cent increase.

Johnstown (Pa.) Leader, May, 1913.

The argument of the railroads is a sound one. The margin between income and outgo is now so very narrow that the least unexpected occurrence, such as the recent Western floods or a bad accident, is liable to turn the balance on the wrong side of the ledger.

Lancaster (Pa.) New Era, January 26, 1914.

The proposed increase of five per cent on freight charges is too small to affect the cost of the necessaries of life. The consumer is not going to feel the effect of an increase of a few cents on every ton of freight, and the railroads argue, with a show of justice, that the additional revenue they would receive if they were permitted to put up their charges to the amount indicated, would help to restore their credit and thus aid in improving the general business of the country.

Oil City (Pa.) Derrick, December 5, 1913.

The reports show there is little trouble in holding gross earnings to a high level, the good business of the country in recent years favoring such receipts, but it is difficult to save any part of the gross return for net improvements. All the gain in gross is swallowed up by a larger expense account, much of which has been created by recent legislation. It seems reasonable to assume that the roads are in need of the five per cent increase in freight rates asked for and that it would be recognized by the Interstate Commerce Commission that failure to obtain them would result in hardship to many important railroad systems.

Philadelphia Bulletin, May, 1913.

It is to be recognized that the general railroad business of the country is not in a condition to stand further increases of expenses without being granted a right to additional earning power.

Philadelphia Bulletin, November, 1913.

If the increase in the cost of individual living is sufficient justification for the addition of seven per cent to the wages of the railroad conductors and trainmen, logically the increase in the cost of railroad living is justification for the advance of their earning power through passenger and freight rates. The Board of Arbitration on the trainmen's demands recognizes the fact that a ton of freight in Eastern territory is moved more than three miles for the value of a two-cent stamp, which is the cheapest railroad service to be found on the face of the globe, but it ignores that fact in its recommendations, because it is forced to admit that labor couldn't live on wages based on that rate. Obviously, if existing freight rates are not adequate to provide a living wage for labor, they cannot provide living income for the railroad operators.

But the Board of Arbitration "passes the buck." The question of rates, the problem of the railroad's living, belongs to the Interstate Commerce Commission, which stands as a challenger of every proposed increase of rates, suspends the new schedules for six months and employs Mr. Brandeis to use whatever resource may be at his command to controvert the railroad's plea. The finding of the Board of Arbitration is binding on the roads, and it ought not only to be accepted without challenge by the Interstate Commerce Commission but it should prompt them to immediate action on the rate advances. The increased wage schedule is retroactive and dates from the first of October, but the increase in rates which is to provide for these additional wages must wait the pleasure of the Interstate Commerce Commission and its proposed muck-raking investigation.

Philadelphia Bulletin, January 21, 1914.

Monday, the Commission made public its official report of the operating income and expenditures of the railroads of the country for the month of November, showing not only an increase in operating expenditure, but a decrease in operating revenue and fully confirming all that had been asserted by the railroads in the original presentation of their case, which had been otherwise confirmed and corroborated in arguments and briefs presented to the Commission.

But, in spite of the fact that all this information is, and has been, in the possession of the Commission, there has just been sent out to the petitioning railroads, the revised Brandeis catechism, shortened and simplified it is said, and yet calling for complications which it is admitted by the Commission will require the greater part of a month to complete, and an indefinite time thereafter to digest and to apply to the problem before them.

Granting the desire of the Commission to "expedite" its proceedings it appears that the middle of March, or nearly six months after the railroads formally presented their case of need, will be the earliest possible date of decree. In the meantime the busiest season of the railroads will have passed, nearly a half year's business will have been hauled at inadequate rates, losses will have been sustained that will not be made up in the balance of the year. If government regulation is to be of practical service it must develop greater efficiency than this. When the arbitrators on wage increases, acting under semi-official sanction, made their recommendation of higher wages, their decree was retroactive. The railroads do not ask for such a privilege in the application of their new freight schedules, but if they are entitled justly to their increase, it should be granted with reasonable promptitude.

Philadelphia (Pa.) Evening Star, November 20, 1913.

It must be very clear that the railroads cannot go on increasing their cost of operation in this way, running their expenses up millions on millions, without having some slight increase in their revenues to meet the drain. The increase in rates asked, five per cent, is very small considering all this and there ought to be a sense of fair dealing in the Interstate Commerce Commission which will perceive this point.

The railroads have been baited on all sides for many years and the time has come when this must cease and when there must be applied to the situation some plain common sense and some fair play else there will be a series of calamities which will involve far more than the railroads and which will be very disastrous to the entire country.

Philadelphia (Pa.) Evening Telegraph, November 26, 1913.

As long as rates remain what they have been and expenses mount higher almost steadily the roads must suffer. There is no authority that can put a stop to the increased expenses as there is authority to halt an increase in rates. It is not necessary to go into details, but the returns of single roads and of a group of roads show that gross earnings have not maintained anything like the percentage to expenses that would enable them to keep pace with the natural demands of the country.

The railroads are an important part of the material prosperity of the country. The prejudice that existed against them for an occasional abuse of privilege has largely disappeared since they were brought under Government regulation. The fact that there is practically no popular opposition to the present request for a moderate increase in freight rates plainly shows that all that is desired is that the railroads shall have fair treatment.

It is to the public interest that they shall have—that there shall be a mutual understanding—for upon just treatment and the reasonable prosperity of the railroads depend in large degree the prosperity of the country itself.

Philadelphia (Pa.) Evening Telegraph, January 13, 1914.

The Interstate Commerce Commission has been deferring for many months its decision on the application of Eastern railroads for an increase of five per cent in their freight rates; and now when a decision is looked for a new set of questions has been sent out to answer which will require months more time, if indeed some of them can be answered at all.

Doubtless a matter of so much importance as this requires time for proper consideration. But the Commission has had time. The conditions should not call for much in the way of new information for a Commission whose continual business it is to know all the ins and outs of the railroad situation at all times. If it had the records and the knowledge that should be kept on hand it would know without a very great deal of argument, in addition, whether the claim for a slight increase in rates is a reasonable one or not.

The question ought to be decided without further delay. To continue holding it up is an injustice to the railroads. Their operations must be more or less hesitating while the uncertainty exists, and in some respects an adverse decision would probably be less disadvantageous than to have the matter hanging on in uncertainty. It is the uncertainty that kills. Delay also will endanger the credit and position of the Commission.

Philadelphia (Pa.) Telegraph, January 29, 1914.

There has been a general feeling that much of the business depression that has been felt for several months was due in considerable degree to the fact that the railroads had restricted their operations owing to decreased net earnings. They have looked forward to an increase in rates to restore activity and quicken the pulse of business. The application for the increase has been before the Commission for four months, and this latest announcement makes it very uncertain when the matter will be determined.

This is a disadvantage to the public as well as to the railroads. The question—like all questions that affect business—should be decided one way or the other with reasonable promptness. Nothing can be expected to go right when a cloud of uncertainty hangs over it.

Philadelphia (Pa.) Evening Times, November 24, 1913.

If railway revenues are to go on being eaten up by dearer labor, dearer fuel, dearer supplies and equipment of all kinds, it is only a question of time till there won't be left from that devouring process any revenues to go into the improvement of existing facilities and the creation of new ones. The money will not be earned to do this, and it can't be borrowed to do it; for it's as simple a proposition as A B C that no capital will back a thing to do more business when the more it does the worse off it is.

It will be a mighty serious thing for railway capital, railway labor and the public when the common carriers can no longer keep up with the transportation needs of the country; it will even be a serious thing for them not to be able to keep ahead of the transportation needs of the country, as they have done in the past.

Philadelphia Inquirer, May, 1913.

They cannot furnish the kind of accommodation the public wants and ought to have unless they are afforded an opportunity to provide themselves with the means.

Philadelphia (Pa.) Inquirer, November 24, 1913.

Some people argue that the increases in wages just granted the railroad employes should be paid out of surplus earnings, or, if necessary, by reducing dividends. The borrowing power of a railroad is determined by its ability to earn dividends. To-day the railroads paying the highest dividends are experiencing the greatest difficulty in borrowing money to make needed improvements, for the simple reason that between 1908 and 1911, the railroads as a whole increased their capital investments 2,000 million dollars, whereas during the same period their surplus, after payment of operating expenses, actually decreased eight and three-quarters millions. Daniel Willard, president of the Baltimore and Ohio, recently pointed out that during the past three years his company had spent $55,000,000 for improvements, whereas net income for the fiscal year ended June 30th last was $751,000 smaller than it was for 1910.

Those figures are not based on theory, but existing conditions, the railroad president said, and it is added that if the public wants improved railroad facilities it must permit the railroads to earn enough to attract the new capital needed.

Philadelphia (Pa.) Inquirer, November 26, 1913.

Many, if not most of the shippers' organizations, have admitted the justice of the railroads' plea and have even asked that the advance be authorized, but it is certainly the business of the shippers to prove, if they so desire and are so able, that the existing rates are adequate, and it is as certainly not the business of the Commission to employ counsel to make or attempt to make this demonstration.

The Interstate Commission was not endowed with the powers which it possesses, powers which are unparalleled in their magnitude, for the purpose of antagonizing the railroads and of making it impossible for them to earn a reasonable profit. Those powers were conferred upon it for the purpose of promoting the welfare of the public and of the railroads alike. They were to be used to secure for the community an efficient service at a reasonable cost and to save the railroads from the secret rebates and from the rate wars which at one time brought so many of them to bankruptcy. Even those by whom the Commission was originally opposed are ready to acknowledge now that the effect of its operations has been beneficial and would be sorry to see any restoration of the conditions which the Commission brought to an end. But it is the duty of the Commission to administer justice and to refrain from partisanship of any kind or sort. Should it fail to do this, it would become an oppressive and intolerable tyranny.

Philadelphia (Pa.) Inquirer, January 22, 1913.

Why all this delay?

Months have already elapsed since the first application was made. The Commission has demanded an immense amount of statistical information which can be of no possible use to it in deciding what is after all a broad principle. The membership of the Commission includes men of practical experience. It is not a court governed by any ancient laws of procedure. It is composed mostly of laymen who are supposed to have common sense, to be able to see things before their eyes.

Whether or no the railways deserve a five per cent increase in freight rates is not to be settled by figures in camera. Every sensible person knows that the railway industry has been suffering through many months' lack of income, that because of this lack of net income it is impossible to borrow money for needed improvements, extensions and betterments. The railways say that they can get the money and start a thousand industries if their requests are granted. The bankers say the money can be forthcoming immediately. The manufacturers say they are waiting only for the grant to start up at high speed.

Could anything be simpler than that? Ought not men of common sense to be able to decide inside of a week whether these statements are true or false? The constant delay is an injustice to business and an injustice to the army of unemployed. It is unfair to postpone so momentous a decision. Any private business would go to ruin quickly under such management.

And what do the railways ask?

They ask the enormous increase in rates of one cent for carrying a ton of freight twenty to thirty miles. That is all. Can anyone believe that this will injure any individual or industry? The Commission probably knows very well at present what it will do. It ought to have given its decision months ago.

Philadelphia Public Ledger, May, 1913.

The whole country rises and falls with the railroads. When roads earn great sums they spend the money in countless ways. The steel mill, the nail factory, the locomotive works, the car builder, the coal mine, the timber owner, the contractor, all feel the effects instantly. Prosperity of the roads carries immediately good cheer to millions of workers who are not employed by them. When the railroads are poverty-stricken, and curtail their outlay, every other industry in America feels the jolt. And they must curtail them when the margin over necessary expenses dwindles to near the zero point. It is impossible for the railroads to keep on increasing wages and other expenditures without also increasing income.

Philadelphia Public Ledger, May, 1913.

"More people are affected directly by an award of the Interstate Commerce Commission than by a decision of the United States Supreme Court. Thus when the railroads shall ask permission to increase freight rates five per cent the yes or no of the Commission may mean prosperity or hard times for many million people.

"This question of rates should be treated on the broadest possible scale. The country cannot afford to strangle or unnecessarily annoy its greatest single industry except agriculture. The welfare of the entire nation is so closely interwoven with the welfare of its tremendous railroad system that one cannot be hurt without as grievously wounding the other.

"No one can escape the conviction that in the past few years the railroads have been put into thumb screws. They have been forced to increase wages several times since the 1907 panic, so that to-day the railroads of the United States pay not only far greater wages than are paid in any other land, but much greater than were ever before paid in this country. Laws have been enacted which compel them to better their equipment and to safeguard their tracks. Public clamor has demanded the most lavish terminals—buildings that rival in splendor the best the world ever saw.

"In every possible direction have the roads been forced to expand and to spend more of their earnings. Wages, track and equipment, each and every one has cut more and more into revenue. The roads are powerless to increase passenger fares or freight rates. At the same time they are powerless to reduce expenses. The sequel is that while this country has been blessed by the most bountiful times ever witnessed, the railroads have not been able to share in it.

"Net profits earned on the outstanding capital stock do not rise. On the contrary, they are falling. If the stockholder were the only one to suffer the case would not be so serious.

"But the whole country rises and falls with the railroads. It has been so for half a century and is so to-day. When roads earn great sums they spend the money in countless ways. The steel mill, the nail factory, the locomotive works, the car builder, the coal mine, the timber owner, the contractor, all feel the effects instantly. Prosperity of the roads carries immediately good cheer to millions of workers who are not employed by them.

"When the railroads are poverty-stricken and curtail their outlay every other industry in America feels the jolt. And they must curtail them when the margin over necessary expenses dwindles too near the zero point. It is impossible for the railroads to keep on increasing wages and other expenditures without also increasing income. Bankruptcy would be the inevitable sequel.

"When the Interstate Commerce Commission takes up this freight rate request it is bound by every instinct of national welfare to consider it in the broadest possible way. The pastime of bullying railroads has ceased to be popular, because it is too dangerous. The Commission can do the country a very exalted service by dealing justly with the railroads without any unnecessary delay."

Philadelphia (Pa.) Public Ledger, January 8, 1914.

The Interstate Commerce Commission reports that the net operating revenue of 152 of the largest railroads of the country for the five months ending January 1st, showed a decrease of $39,000,000 as compared with the corresponding five months of the previous year.

The sixty-one roads in Eastern territory, which are demanding a five per cent increase in freight rates, showed an increase of about $4,500,000 in gross revenue, but this was more than taken up by an increase of nearly $31,000,000 in operating expenses.

The figures vindicate the urgency of the railroads' request. It will be time enough to discuss Government ownership when Government regulation has discountenanced popular hysteria against the roads to the extent of permitting them to be conducted on a sound financial basis.

Philadelphia (Pa.) Public Ledger, January 9, 1914.

Has the hour not arrived when the managers of big business and the operators of railroads should come forward with their own program of action? Has the day not passed when these men who are responsible for such stupendous enterprises can sit supinely while legislative and political machinery is in action in its efforts to dissolve and to curb?

The news from Washington outlines a new anti-trust program for Congress. Either this action is right or it is wrong. Either the trusts deserve to be cut into shreds or they deserve to be let alone. Either the railroads should wait for Mr. Brandeis to delve into the whole scheme of world-wide railroad operation before getting an advance in freight rates or they should not wait.

This question of ceaseless agitation involves all States and all the people in every one of them. It is not confined to the welfare of Wall Street. It is far greater than the interests of property owners, because it embraces every laborer as well as every employer.

The 188,000 freight cars now idle touch the interests of shipper, of consumer and of workmen as well as the interests of bond owners and stockholders. It is manifestly the very first duty of railroad managers to present their case, if they have one, and put it in such form that it may be heeded.

All who depend upon business—investors and workers—as well as Congress, should immediately frame a program of action and let the world know what they have to offer in contradiction to the plans of further assaults upon them.

Philadelphia Record, May, 1913.

The interests of the railroads and the public are really identical, for one cannot suffer serious losses without the other being greatly affected. The present situation calls for fair and just treatment of the railroads if future trouble is to be avoided.

Philadelphia Record, December 6, 1913.

The man of family who finds that his outgo is rising rapidly seeks to increase his income, either by enlarging his business, or securing an advance in salary, or taking on extra work, and if these expedients fail he proceeds to cut his expenses. So it is with the railroads. Their expenditures are steadily rising, because of the increased cost of material and fuel, higher wages for employes, public demands for improvements, etc., but they cannot secure a corresponding gain in income without governmental sanction. In foreign countries, where the State owns the railways, there has not been the slightest hesitation in raising rates to keep pace with the growing cost of operation. That must be done here, too, if the railroads are to continue efficient agencies. While everything else is going up in price there can be no justice in singling out this one class of corporations and saying that they alone must stick rigidly to the old rates, no matter what the consequences may be.

Pittsburgh (Pa.) Post, November 25, 1913.

As a matter of fact it must be apparent that if the prices of material and labor continue to increase there must be an increase in freight rates some time. It is quite certain that many roads have been able to operate without an increase only by skimping in the expense for upkeep. That will ultimately prove uneconomical because it is dangerous, leading to ineffective operation first and then to accidents.

Reading (Pa.) Eagle, November 25, 1913.

The Interstate Commerce Commission has begun hearing evidence on the application of the Eastern railways for permission to increase freight rates five per cent. In 1910 a similar application was made but for a ten per cent increase, which was refused. In the opinion of many impartial investigators, however, conditions have since changed, so that there are reasons which did not apply three years ago for granting the smaller increase now requested.

Not only have legitimate expenses increased and the railroads added to their investments and therefore to their interest charges in the last few years, but it is certain that they will have to make great additional expenditures in order to handle business in the next few years. Double tracks, safer signals, larger locomotives and cars, heavier rails and many other articles of new equipment must be purchased. These expenditures can only be met by bond and stock issues and the interest and dividend charges must come from increased rates.

Reading (Pa.) News, November 26, 1913.

It is generally admitted that the operating expenses of the companies have greatly increased, as they have been forced to advance the wages of their employes, and they are placed in the peculiar position of making a larger outgo without ability to increase their revenue by advancing charges to meet the new and extraordinary expense.

No fair-minded man would want to see the great railways permanently crippled and all the public will ask is that the Commission shall weigh the evidence justly and render a decision that will be fair to all the interests involved—those of the railways and those of the public.

Reading (Pa.) News, December 1, 1913.

It is hoped that the Commission will not be long in rendering a decision.

The uncertainty is unsettling not only to the railways themselves, but also to the iron and steel industry for the railway companies are holding back their orders for new material until they know whether the Commission will grant them authority to increase charges.

It is thus seen that what affects one industry affects another. Of course, the companies are putting on a "Long Face" in stating their side of the case before the Commission, but it does seem as if they would be seriously handicapped if they failed to get something from the Commission.

Scranton (Pa.) Times, May, 1913.

The corporations cannot meet transportation facilities demanded by the public, without the means to buy equipment, make extensions and meet needs, and while there has been an advance in rates in all other kinds of business, the railroads have met greatly increased expenses, without getting consequent revenues in return.

Scranton (Pa.) Times, November 25, 1913.

The railroads are in stress with increased costs in every line, without necessary revenues to meet the needs of maintenance. There is reason to hope the very moderate request of the railways will be granted.

Scranton (Pa.) Times, November 26, 1913.

The proposed general advance of five per cent in rates that this increase would afford, would only cause the slightest disturbance to the commercial world and would be of considerable benefit to the development of their properties. A leading railroad official estimates that the increase asked would add between $35,000,000 and $40,000,000 to the revenues of the fifty-two railroads involved.

Shamokin (Pa.) News, November 29, 1914.

It is generally admitted that the operating expenses of the companies have greatly increased, as they have been forced to advance the wages of their employes and they are placed in the peculiar position of making a larger outgo without ability to increase their revenue by advancing charges to meet the new and extraordinary expense.

No fair minded man would want to see the great railways permanently crippled and all the public will ask is, that the Commission shall weigh the evidence justly and render a decision that will be fair to all the interests involved—those of the railways and those of the public.

Altoona (Pa.) Gazette, November 25, 1913.

Nothing has done so much for this country as its railroads. Their development along all lines has never been equalled in the world. It should continue, and any course that would bring it to a halt would be a great deal more costly than the additional freight tolls the country will have to pay if the increase is granted.

All through this business there has been the usual disposition of Americans to go too far with a good thing. Regulation of the railroad corporations was badly needed, but persecution of them, which is what is meant by some of the laws placed on the statute books of this State in recent years, is a very bad thing. It is bound to be reflected in the progress of the roads, in the quality of their service, in the safety of their operation, and in many other ways.

Titusville (Pa.) Herald, May, 1913.

Something has to break somewhere. Without this advance the roads will find it increasingly difficult to provide the funds needed for maintenance and new equipment and at the same time continue to pay a fair return to stockholders in the shape of dividends upon their investment.

Williamsport (Pa.) Gazette-Bulletin, November 29, 1913.

The railroads are clearly entitled to revenues sufficient to make their stocks and bonds interesting to the investing public. The interests of the public are linked inseparably with those of the great transportation lines, and those who are opposed to granting the railroads the right to advance freight rates are enemies not so much the railroads as of the people.

Williamsport (Pa.) Bulletin, January 12, 1914.

Each of the fifteen thousand members of the Illinois Manufacturers' Association has received from the Board of Directors a communication urging him to "wire the President, wire your

Senators, wire your Representative to use their influence for a five per cent horizontal raise in freight rates in Official Classification Territory." They are requested to do this upon the ground that the authorization of the raise will "make business boom."

Other commercial bodies in different parts of the country have assumed the same attitude, but the action of the Illinois organization is especially significant because that body led the successful fight against the increase of rates for which permission was sought a little over three years ago. Its change of mind is the result of an exhaustive investigation which disclosed that the actual conditions are materially different from those existing in 1910. Owing to the increase of wages secured through an enforced arbitration, to the increase in taxes, to the additional expenditures imposed upon the railroads by legislation of the "full crew" type, etc., the net revenues of the railroad have been reduced to a point at which they are insufficient to provide for that degree of rehabilitation and extension of facilities which prompt an efficient service to the shippers' demand. * * *

The Kane (Pa.) Board of Trade also "favors the granting of the five per cent increase asked for by the railroads of the Eastern District." The Kane organization represents "seven thousand persons, whose shipments, inbound and outbound, average one thousand tons a day." This action is commendable, showing that the spirit of fair play, which is due the railroads as well as individuals, is strong with the people of Kane.

The resolution of the Illinois Association and that of the Kane Board are in harmony with the conclusions invariably reached by fair minded and intelligent men who give the matter due thought.

Burdens have been added until endurance has reached its limit. Plainly, adverse action by the Commission would be the last straw.

ILLINOIS.

REPLIES OF A FAVORABLE CHARACTER.

M. C. Chapman, President, Fox River Valley Manufacturers' Association of Aurora.

Our members are in favor of allowing the railway companies to increase their freight rates so far as the five per cent is concerned, but our Association has taken no official action thereon. While the majority of our members are heavy shippers they feel that the railway wage scale has advanced to a considerable extent in the last two to four years, in fact so much so that we think the railway companies are entitled to the increase,

Secretary, W. F. Vanderburgh, Cairo Commercial Club. (Population 14,548.)

The directors of the Commercial Club adopted the following resolutions on January 6, 1914, favoring the proposed advance of five per cent in freight rates provided same is made uniform and without discrimination:

Whereas, The railroads operating in so-called Official Classification Territory have filed a petition with the Interstate Commerce Commission, to the end that the carriers in said territory may be permitted to advance all interstate rates five per cent, and

Whereas, Said petition has been denied, and in lieu thereof the Commission will proceed under a general inquiry into the subject under investigation and suspension docket No. 333, and

Whereas, The Cairo Commercial Club in meeting assembled this 6th day of January, 1914, to consider and determine their attitude respecting the question which they recognize as of great importance to the members of the organization, the carriers and the public at large: now therefore be it

Resolved, That the attitude of this club is as follows—

That this organization is in sympathy with the plan of an advance of five per cent in above described territory, provided that such advance is general and uniform, and without discrimination, and be it further

Resolved, That a copy of these resolutions be furnished the Interstate Commerce Commission.

Mayor Fred Pullen of Centralia. (Population 9,680.)

(1) Yes; without question it should be done and our people are anxious about it.

(2) Yes; we feel that it should be done at once.

Mayor O. B. Dobbins, of Champaign. (Population 12,421.)

(1) I believe the sentiment in this city favors the increase as a relief to the general depression.

(2) If made, it should be promptly accomplished. The sentiment also is, I believe, that Congress should take charge of the regulation of railway securities at once.

Secretary, C. W. Murphy, Managing Secy., Champaign Chamber of Commerce.

Our Association has never taken formal action regarding the increase in freight rates. At a recent meeting the subject of increased rates was discussed and remarks by our members who spoke, indicated a desire to have rates by which carriers might conduct their business at a profit.

Traffic Director, Chicago Association of Commerce. (Population 2,185,283.)

The following resolutions regarding the proposed advance in freight rates in Official Classification territory were adopted November 9, 1913, by the Freight Traffic Committee of the Chicago Association of Commerce. A copy of other resolutions adopted by this committee on December 23, 1913, wherein the Commission is urged to expedite the investigation and hearings with all possible dispatch to the end that a speedy termination of the question may be reached, is also appended:

Resolutions Adopted by the Freight Traffic Committee of the Chicago Association of Commerce, at Their Meeting Held October 9, 1913, in Respect to the General Advance in Freight Rates in the So-Called Official Classification Territory.

Whereas, The railroads in the so-called Official Classification Territory filed a petition with the Interstate Commerce Commission to re-open the so-called General Rate Advance Case (heard and decided adversely to the carriers about two years ago) to the end the carriers in said territory be permitted to advance all interstate rates five per cent, and

Whereas, Said petition has been denied and in lieu thereof the Commission will proceed to a general inquiry into the subject, and

Whereas, The Freight Traffic Committee of the Chicago Association of Commerce has held many meetings to consider and determine their attitude respecting the question, which they recognize as of great importance to the members of the Association, the carriers, as well as the public at large; now therefore be it

Resolved, That the attitude of this Committee is as follows:

First. The Committee is in sympathy with the plan of having the question adjudicated by the Interstate Commerce Commission, that Body to determine from the facts the necessity for said proposed advance and the reasonableness of the rates to be established thereby. The Committee look upon this proposed advance in the ALL RAIL rates as experimental. If the benefits arising therefrom are mutual and of a permanent nature the increase may be justified. If, on the contrary, the results are not permanent and a request for another increase in rates follows, it will demonstrate that advances in rates do not meet the issues involved, nor provide a remedy for existing conditions.

Second, The Committee especially invites the Commission's attention to the fact that the movement towards higher transportation charges in Official Classification Territory has, in the past, fallen to an undue and unreasonable extent upon the RAIL-AND-LAKE RATES. If the claim of the carriers be conceded that increased cost of operation, taxes, and a return upon additional capital justifies some increase in ALL-RAIL interstate rates, we respectfully submit that such claim cannot and does not apply to the RAIL-AND-LAKE RATES, which have been advanced three times since 1900 (a total of approximately eleven per cent) without any change in the ALL-RAIL RATES, which fact not only debars the claim that a fixed relation exists between the ALL-RAIL and RAIL-AND-LAKE rates that requires them to be similarly changed, but establishes the further fact that traffic moving under these rates has already contributed in full measure to any reasonable advance. We therefore are irrevocably opposed to any advance in the present RAIL-AND-LAKE RATES. Be it further

Resolved, That a copy of this resolution be sent to the Interstate Commerce Commission.

Preamble and Resolutions Adopted by the Freight Traffic Committee of the Chicago Association of Commerce at Their Meeting Held in the City of Chicago, Tuesday, December 23, 1913.

Whereas, The Freight Traffic Committee of the Chicago Association of Commerce did on the 9th day of October, 1913, adopt certain resolutions touching upon the question of the pending investigation upon the part of the Interstate Commerce Commission into the proposed general advance of five per cent in freight rates in so-called Official Classification Territory, and

Whereas, Said Committee in their resolutions have not opposed, and do not oppose, the suggested advance in the all-rail interstate rates, and

Whereas, Long continued uncertainty as to the final outcome in the judgment of this Committee, will be detrimental to the commercial activities of the country, now therefore be it

Resolved, This Committee respectfully urge upon the Interstate Commerce Commission the propriety of causing all parties to the case to proceed with all possible dispatch to the end that a speedy determination of the question may be reached. Be it further

Resolved, That a copy of these resolutions be sent to the members of the Interstate Commerce Commission.

Secretary, J. C. Merrill, Chicago Board of Trade.

The following is a copy of resolutions passed on January 13, 1914, by the directors of the Chicago Board of Trade regarding the proposed increase in Official Classification territory:

The Transportation Committee unanimously recommends to the Honorable Board of Directors the adoption of the following resolution and its transmission to the Honorable Interstate Commerce Commission:

Whereas, This Committee recommend that the carriers be allowed a uniform advance of five per cent in rates for the purpose of furnishing increased transportation facilities and more adequate service, and

Whereas, The Honorable Board of Directors adopted such resolutions on November 25,1913, and transmitted same to the Honorable Interstate Commerce Commission; therefore be it

Resolved, That this Committee now recommend to the Honorable Board of Directors that it invite the attention of the Honorable Interstate Commerce Commission to the resolutions hereinbefore referred to and respectfully urge that a decision of the question be rendered at the earliest possible date, because the uncertainty has the effect of unsettling business, and an early determination of this question will remove the uncertainty and aid the resumption of normal business conditions.

General Secretary, National Business League of America, Chicago.

At a meeting held in Chicago on January 15, 1914, the National Business League of America adopted the following resolutions regarding the petition of the carriers in Eastern territory for an increase of five per cent in their freight rates:

Whereas, The Resolutions Committee of the National Business Congress, held under the auspices of the National Business League of America, in the platform adopted June 27, 1912, declared that 'sufficient and efficient transportation is necessary to the prosperity of the whole country' and 'depending upon transportation regulation as an established fact, we believe it important that in providing regulations due consideration be given to the question of securing transportation net earnings sufficient to meet all necessary costs of maintenance and operation, and to provide all facilities required by the growth of every community'; and

Whereas, We believe that the present net earnings of the railways are insufficient for the proper maintenance of equipment, extension of facilities, efficient service and safety of life and property; resulting also in the curtailment of purchases from dependent industries, which seriously cripples the general business of the country; therefore, be it

Resolved, By the Board of Directors of the National Business League of America, that, as a necessary measure, imperative to the prosperity of carrier, shipper, and business interests generally, an immediate uniform increase of not less than five per cent transportation rate be granted the railway interests; and be it further

Resolved, That copies of this preamble and resolution be presented to the members of the Interstate Commerce Commission and to the public press.

PHILETUS W. GATES,
President.
AUSTIN A. BURNHAM,
General Secretary.

Thomas F. Beuther, Secretary, Northwest Side Commercial Club of Chicago.

On February second the Executive Committee of this organization voted in favor of the increase in freight rates in the following manner:

> That Northwest Side Commercial Association go on record as favoring an increase of five per cent in freight charges to carriers as indicated in their recent petition to the Interstate Commerce Commission.

Mayor Dan Dinneen of Decatur. (Population 31,140.)

(1) While I am not aware that the matter has been discussed here to any extent, the people of Decatur are in favor of treating the railroads fairly and if it requires five per cent in freight rates to insure fair treatment, then tack it on.

(2) The request being just, it is believed it should be granted without delay.

Secretary, John M. Byrne, Decatur Chamber of Commerce.

Without making a particular investigation, I am of the opinion that the sentiment in Decatur generally favors fairness of attitude towards the railroads. If fairness means an increase in rates, Decatur business men will favor the increase. No resolutions have been passed by our Chamber of Commerce.

Mayor of Elgin. (Population 25,976.)

(1) The Elgin Commercial Club after a canvass of this situation among the manufacturing and mercantile interests, has officially endorsed the proposition to grant a five per cent increase to carriers in Official Classification territory.

(2) We believe it proper to leave the question of National regulation of railway securities to Congress.

Secretary, E. D. Howell, Elgin Commercial Club.

Acting under instructions from the Board of Control of this Association, though without passing formal resolutions, I have wired the President of the United States and the Congressmen from this district, advising them that we favored the advance in Official Classification territory.

Secretary, Freeport Chamber of Commerce. (Population 17,567.)

Our organization has passed no formal resolutions relative to the proposed increase in freight rates in Official Classification territory. However, as it is incumbent upon me to watch the rate situation here closely, I had occasion to ascertain how our people, including shippers both large and small, feel concerning this proposed increase of five per cent and so far I have found no one who had any serious objection to it. In fact, most of the largest manufacturers and shippers have signed a petition requesting the Interstate Commerce Commission to permit the suspended tariffs to go into effect.

We feel that to a certain extent the railroads have been getting more than their due the past few years in the way of criticism and adverse legislation, particularly in certain states, and while they are perhaps responsible for this themselves in view of their past misdeeds and lack of regard for public sentiment, we feel that inasmuch as the railroads are one of the most, if not the most, important factors in our commercial and industrial development, they should not be unduly restricted in their operations. If the granting of the proposed increase of five per cent to carriers in Official Classification territory will have the effect of strengthening the confidence of the investing public in the railroads and if it will permit them to finance their operations more readily, we believe that it will be an excellent thing for all concerned. Certainly curtailment of purchases by the railroads is not beneficial to business and neither is their policy to make no improvements or extensions under present conditions.

It is competitive rates that we are principally interested in and a five per cent increase in rates will hurt no one. It all comes back to the ultimate consumer anyway and such an increase as this would hardly be felt. We do not want you to assume from this statement that we do not think that careful consideration should be given to all proposed increases before they are permitted to go into effect, for we do, but the increase under consideration is, we think, perfectly proper and we are heartily in favor of it.

J. F. Berger, Secretary, Granite City Commercial Club. (Population 9,903.)

In reply to your letter of January 15th regarding the proposed increase of five per cent in freight rates, I desire to state that the Granite City Commercial Club has passed a resolution endorsing the increase and has wired President Wilson and both the United States Senators informing them of our action in the matter.

Secretary, C. E. Mitchell, Hoopeston Business Men's Association. (Population 4,698.)

We desire to state that we are in favor of an increase in freight rates.

Secretary, Illinois Manufacturing Association.

The following is from a letter sent by Secretary John M. Glenn, on January 6th, to the members of the Illinois Manufacturing Association:

"Wire the President, wire your Senators, wire your Representatives to use their influence for a five per cent horizontal raise in freight rates in Official Classification Territory.

"Do not suggest selfish exceptions as to lake and rail rates. Closed plants mean idleness and suffering to the entire country. With the industries shut down all business will be at a standstill.

"Act, and act promptly. The Interstate Commerce Commission should be impressed with the importance of a quick decision.

"At the regular monthly meeting of the directors of the Illinois Manufacturers' Association, January 2nd, a committee composed of Charles Piez, P. A. Peterson and John E. Wilder, after several months' investigation of railroad conditions throughout the country, reported the following resolutions, which were unanimously adopted:

"'Your committee has after thorough investigation, found that conditions with the railroads have changed materially since your Association successfully opposed the request for an advance in 1910. That the increase in wages granted through arbitration, the increase in taxes, the increased expenditure to insure safety to both the men and the public, and the increase caused by legislation of the full crew type have so increased the operating expenses of the railroads in general that the net revenues are insufficient to provide for that degree of rehabilitation and extension of facilities which prompt an efficient service to the shippers' demands.

"'Your committee is convinced that shippers can better afford to pay a uniform advance of five per cent than suffer in the future any impairment of railroad service.

"'Therefore the Illinois Manufacturers' Association, through its board of directors, declares itself in favor of granting the request for a uniform increase of five per cent of all rates in Official Classification Territory.

"'That this increase be applied not to further wage advances but to the rehabilitation and extension of facilities so that the present service to the shipper be maintained and improved.'"

Secretary, Anton Schager, Joliet Merchants' Association. (Population 34,670.)

The following letter to Governor Dunne, of Illinois indicates the attitude of the Merchants' Association of Joliet, regarding the proposed increase of five per cent in freight rates in Official Classification territory:

Joliet, Ill., January 9, 1914.

Dear Sir:

We beg to call your attention to the following telegram which this Association has sent to our Member of Congress, our United States Senators and also Interstate Commerce Commission at Washington, D. C., this day and date.

"Executive Board favors speedy action favoring uniform five per cent increase in freight rates in Official Classification Territory."

Our Executive Board in session decided by unanimous vote to send above telegram to the parties named and also instructed the Secretary to apprise your Excellency of the action taken in this matter so as to let you know the sentiment among the business men of Joliet in this matter. Anything that you may be able to do in favor of this movement will be appreciated and we would certainly be pleased to hear from you in reference to this communication.

Very respectfully,
Merchants' Association of Joliet,
Anton Schager, Secretary.
Joseph F. Nachbour, President.

Mayor David Laving of Kankakee. (Population 13,986.)

(1) While so far as I know, there has been no expression of business men publicly as to the five per cent increase in freight rates, I have heard a great many large business men say if rates were not satisfactory, they would be willing to accept the increase.

(2) Yes.

Mayor David Davis of Litchfield. (Population 5,971.)

(1) I believe the sentiment of the business men of our city is strongly favorable to the proposition of permitting the carriers to increase their freight rates five per cent.

Mayor W. R. Johnson of Mattoon. (Population 11,456.)

(1) The sentiment of the business men of this community is strong for an increase in freight rates. Many believe five per cent is not enough.

(2) Yes. A prompt decision should be reached with no further delay. The opinion of our business men is that nothing will improve business as much.

Secretary, H. A. Jansen, Moline Tri-City Manufacturers' Association. (Population 24,199.)

This organization has gone on record as favoring the increase in freight rates to carriers, as it believes that the railroads are entitled to some consideration and a petition will be sent to the Interstate Commerce Commission asking that such increase be granted to the railroads as in their judgment is just and right to both the railroads and the shippers.

Secretary, Kirby Smith, Mount Vernon Commercial Club. (Population 8,007.)

The following resolutions have been passed by the Mount Vernon Commercial Club regarding the proposed increase of five per cent in freight rates in Official Classification territory:

Whereas, The Interstate Commerce Commission is now giving consideration to the request of the railroads in Official Classification Territory that they be permitted to advance their freight rates uniformly five per cent,

Whereas, Your Committee has given very careful consideration to the attitude which the Commercial Club of Mt. Vernon, Illinois, should adopt respecting this request, in view of the general and local vital interest our community has in the prosperity of the whole country, the railroads of America included,

Whereas, Your Committee has after thorough investigation found, (First) That conditions with the railroads have changed materially since the whole country successfully opposed the request of the roads for a similar advance in the year 1910, (Second) That the increase in wages granted through arbitration, the increase in taxes, the increased expenditure, to insure greater safety to both the operatives and to the public, and increase of operation caused by legislation of the full crew type, have so increased the operating expenses of the railroads in general that the net revenues are insufficient to provide for that degree of rehabilitation and extension of facilities which prompt and efficient service of the shipper demands, and

Whereas, Your Committee is convinced that shippers can better afford to pay uniform advance of five per cent than to suffer in the future any impairment of the railroad service; now, therefore, be it

Resolved, That the Commercial Club of Mt. Vernon, Illinois, through its Board of Directors declares itself in favor of granting the request for a uniform increase of five per cent of all rates in the Official Classification Territory.

Resolved, That this increase be applied not to further wage advances, but to the rehabilitation and extension of facilities so that the present service of the shipper be maintained and improved;

Resolved, That a copy of these resolutions be sent to the members of the Interstate Commerce Commission, with our belief that their body should reach a final determination of the question as speedily as possible.

G. F. M. WARD, President.

KIRBY SMITH, Secretary.

Mt. Vernon, Illinois, Jan. 10, 1914.

Mayor Charles Dinsdicker of Pekin. (Population 9,897.)

(1) I have had personal conversation with quite a number of shippers who express their opinion that a beneficial action towards railroad companies will stimulate trade and general business, as under present rates, railroads are unable to keep up the necessary improvements demanded by the public.

Secretary, Willis Evans, Executive Secy., Peoria Association of Commerce. (Population 66,950.)

While our organization has not as yet, taken definite action for or against the proposed increase in freight rates, it is generally understood among the business men of Peoria that the increase should be granted. At a meeting of shippers held recently under the auspices of the Association of Commerce this subject was discussed and favorable action taken and at a meeting of the Transportation Club, representing shippers, held a few evenings ago, it was unanimously agreed that the freight rates should be advanced.

Secretary, Louis A. Zearing, Princeton Commercial Club. (Population 4,131.)

The Commercial Club of Princeton has taken no definite action regarding the question of an increase in freight rates. While the matter has not received their attention, it seems to be unanimously the sentiment of the Club that the proposed increase in freight rates should be endorsed by the general public. They feel that it is for their individual interest as well as the interest of the various railroad companies that such increase be granted.

REPLIES OF AN UNFAVORABLE CHARACTER.

Secretary, James Costillo, Bloomington Commercial Club. (Population 25,768.)

In this locality it is our observation that none of the freight payers favor the increase.

Mayor M. E. Kirkpatrick, of Granite City. (Population 9,903.)

(1) My judgment is that the business men of this city are not in favor of an increase of five per cent in freight rates.

Mayor E. F. Bradford of Ottawa. (Population 9,535.)

(1) No.

Mayor, Spring Valley. (Population 7,035.)

(1) While the matter has not been discussed in any of our local organizations, I believe that the majority of the business men do not favor such increase.

Mayor A. J. Platt of Sterling. (Population 7,464.)

(1) It is the general feeling of the business interests of our city that railroad rates are now sufficiently high.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, F. S. Burns, Belleville Retail Merchants' Association. (Population 21,122.)

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Commercial Club, Belleville.

No action has been taken by this Club for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, F. R. Colburn, Belvidere Commercial Club. (Population 7,253.)

No action has been taken by this Club for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Carmi Business Mens' Association. (Population 2,833.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, H. H. Roseman, Danville Industrial Club. (Population 27,871.)

No action has been taken bv this Club for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Du Quoin Commercial Club. (Population 5,454.)

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Earlville Commercial Club.

No action has been taken by this organization for or against the proposed increase. of five per cent in freight rates in Official Classification territory.

C. H. Potter, Pres., Elgin Board of Trade. (Population 25,976.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Leonard C. Mead, Temporary Secy., Geneva Commercial Club.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Mayor, Harvard. (Population 3,008.)

(1) There has been no resolution of any kind passed with regard to this matter in our community.

Secretary, E. F. Davis, Hinsdale Commercial Association.

This action was brought up at a meeting of our Association, but it was decided that no action should be taken at this time.

Secretary, Paul B. Fritchey, Jacksonville Chamber of Commerce. (Population 15,326.)

Up to the present time our organization has remained neutral on this matter. I note, however, in the last issue of the *Illinois Manufacturers' News* that the Joliet Retail Merchants' Association has strongly endorsed such increase.

D. P. Cleghorn, Secretary, Kankakee Commercial Association. (Population 13,986.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, J. F. Beatty, Morris Industrial Association. (Population 4,563.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Frank E. Foster, Mayor, Mount Vernon. (Population 8,007.)

(1) While the Commercial Club has passed resolutions in favor of the increase there are some in our community who differ from the position. Therefore, personally, I would answer, No.

Martin Scherff, Acting Secretary, Peoria Merchants' Association. (Population 66,950.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, L. W. Tillsburg, Pontiac Commercial Club. (Population 6,090.)

No action has been taken by this Club for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Quincy Chamber of Commerce. (Population 36,587.)

No action has been taken by this Chamber of Commerce for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, A. L. Yantes, Shelbyville Commercial Club. (Population 3,590.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Nelson A. Rickert, Waterloo Commercial Club.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

ILLINOIS EDITORIAL COMMENT.

Chicago (Ill.) American Lumberman, December 27, 1913.

Opinions differ as to the outcome of the railroads' petition before the Interstate Commerce Commission for an advance in the Eastern freight rates but when the lumber industry is so generally in favor of permitting an advance it may be assumed that other lines of business will take a like position, that objections will be less strenuous and that the final outcome will be an increased revenue for the railroads.

Lumbermen have objected to the advance on various grounds; one of the most important being that lumber, considering the service rendered by the shippers in handling it and its desirability to the railroads as a traffic commodity, is already carrying too high a rate on the average. Yet the majority of lumbermen seem disposed to waive or defer that point in favor of what they believe would be for the general benefit of the country's business as well as of the railroads.

Chicago (Ill.) Evening Post, October, 1913.

"During July, 1913, the railroads of the United States received 4.4 per cent more money than they did in July, 1912.

"But it cost them 8.5 per cent per mile more to operate.

"These are the figures of the Bureau of Railway Economics.

"Every bit of statistics seems to strengthen the reasonable demand of the roads that the increase of their expense due to governmental regulation be balanced at the other end of the scales. There must be some 'give' in the structure somewhere, else the pressure will wreck it."

Chicago (Ill.) Evening Post, November 28, 1913.

"A man is as old as his arteries," physicians tell us, which, being interpreted, means that as long as the channels of blood supply are efficient, health and vigor are assured. Premature old age follows upon a thickening or hardening of the arteries that impedes free circulation.

It is perhaps not too far-fetched to compare the railroads of the country to the vascular system in the human anatomy. They are channels of the nation's life and commerce. Upon their efficiency depend in large degree the health and vigor of the nation. To regard them as mere collectors of fares and rates and distributers of dividends is to miss wholly a proper understanding of their function. Impairment of arteries means starvation for the brain, muscles and digestive organs. Impairment of railroads involves similar sympathetic disturbances in phase of the country's business. It is this fact that makes the problem now before the Interstate Commerce Commission one of vastly greater moment than the mere cost to the public of a five per cent increase in rates. If the railroads are justified in their complaint that they are being starved under existing conditions, a five per cent increase well may be small price to pay for averting national arterial sclerosis.

Chicago (Ill.) Inland Printer, November, 1913.

E. W. Beedle, president of the Henry O. Shepard Company, of Chicago, in an article in a recent edition of the "Inland Printer" favors the five per cent advance in freight rates asked by the steam railroads of this country. He believes better service will result and that an advance in rates will be in the interest of general prosperity.

Mr. Beedle addresses himself in particular to business men connected with the printing and publishing trade. He points out that the proposed advance is favored by Chambers of Commerce in St. Louis, Cincinnati, Baltimore, Pittsburgh and Philadelphia.

Mr. Beedle asserts that the conditions surrounding the higher freight rate movement at this time are considerably different from what they were in 1910. "Shippers," he says, "two years ago protested mainly on two grounds—first, that the carriers could not show their need of greater revenue; and second, that the proposed schedules would not fall equitably on the several classes of traffic. Industrial executives also complained that the managers had not conferred with them before filing advances. This year all three of these conditions seem to be met.

"Business men understand that in order to increase plants it is necessary to raise new capital and that surplus earnings are required as a guarantee that a return can be paid on additional stocks or bonds. Business men cannot afford to have the railroads of the country fall into a situation where augmentation of rolling stock, road and terminals is retarded. Poor service would be a greater injury to the shippers than they would suffer from any increase in rates which the Commission is likely to sanction. Railroads, too, with their vast purchases and payrolls, are an enormous factor in national prosperity. Every interest gains when the roads are vigorously carrying out projects of importance."

Chicago (Ill.) Inter Ocean, November 26, 1913.

To put the case plainly, the general situation of American railways is that of industries which are being crowded steadily toward the precipice of bankruptcy, receivership and reorganization, with wiping out of stock interest and quite possible scaling down of bond equities. Some are much farther from this precipice than others, but all are being crowded toward it.

Compelled to pay more for everything they buy, the railways are not permitted to charge more for the only thing they have to sell. So far that is the attitude of the government powers, in obedience to an assumed popular mandate. It is to be hoped that the Wilson administration will be wise in time and change the governmental attitude. For a great multitude of small investors, with votes, are bound to suffer if the railways are crowded over the precipice so plainly before them.

Chicago (Ill.) Inter Ocean, January 4, 1914.

The directors of the Illinois Manufacturers' Association have unanimously approved the report of their special committee urging the Interstate Commerce Commission to grant the request of the railways for permission to advance freight rates in Official Classification Territory, which includes, roughly speaking, all points east and south of Chicago.

The action of the Illinois manufacturers may cause surprise in some quarters, in view of their well-known activity the other way in 1908 and 1910, when they organized the shippers of the country against the advances then asked, with the result that in 1908 the railways withdrew their request and in 1910 it was denied.

The explanation is that the situation has changed and these representative leaders of Illinois industry are clear-eyed and broad-minded enough to perceive the fact and act accordingly.

Chicago (Ill.) Inter Ocean, January 17, 1914.

The directors of the National Business League of America, at their meeting in Chicago, Thursday, unanimously adopted resolutions asking the Interstate Commerce Commission to permit the railways to make "an immediate uniform increase of not less than five per cent" in freight rates.

The National Business League is a nation-wide association of prominent business men, mostly merchants and manufacturers. That is, their interest is that of the shipper—the buyer of railway service. While many of its directors are residents in and near Chicago, these resolutions do not express merely a local opinion but also that of the affiliated organizations in thirty States, ascertained through their vice-presidents of the national association.

This is probably the first time that any large number of shippers has asked that freight rates be increased. The reasons for this about-face on the part of so many representative shippers are clearly shown by the resolutions adopted, of which we present the substance:

> Sufficient and efficient transportation is necessary to the prosperity of the whole country. * * * We believe that the present net earnings of the railways are insufficient for the proper maintenance of equipment, extension of facilities, efficient service, and safety of life and property, resulting also in curtailment of purchases from dependent industries, which seriously cripples the general business of the country.

Therefore, the grant of permission to increase rates is asked "as a necessary measure, imperative to the prosperity of carrier, shipper and business interests generally."

The logic of this is conclusive. The reaching of a conclusion so logical is a gratifying sign of a renewed perception of the truth that in the long run all material interests of the American people must go up or down together, and of emergence from the delusion that it is possible to impoverish and pull down the transportation industry without all of us suffering in the end and paying for the folly.

Theoretical "railway economists," such as Louis D. Brandeis, will continue to argue, of course, that what the railways need is not higher rates but "more efficiency." Here and there a prominent business man will still insist on what is, under existing conditions, putting the cart before the horse. We note that John Wanamaker is quoted as so doing.

These gentlemen seem to forget that before improvements can be made there must be means, or a good prospect of means, with which to pay for them. Efficiency must often wait for income to support it. If Mr. Wanamaker will look back he will doubtless remember days when he had to get along with poorer equipment and less competent help than he wanted, because he could not yet afford to buy better.

That is, broadly speaking, the position of the railways. Under pressure of public sentiment which too long remembered injuries and forgot benefits they have been brought by governmental power to semi-starvation. It is absurd to ask that a half-starved man or industry show the highest efficiency.

The Interstate Commerce Commission and the Wilson administration will do well to heed the counsel of the shippers. No administration can be popular or party retain power whose name has become a synonym for industrial depression and business paralysis.

Chicago (Ill.) Inter Ocean, November 26, 1913.

To put the case plainly, the general situation of American railways is that of industries which are being crowded steadily toward the precipice of bankruptcy, receivership and reorganization, with wiping out of stock interest and quite possible scaling down of bond equities. Some are much farther from this precipice than others, but all are being crowded toward it.

Compelled to pay more for everything they buy, the railways are not permitted to charge more for the only thing they have to sell. So far that is the attitude of the governmental powers, in obedience to an assumed popular mandate. It is to be hoped that the Wilson administration will be wise in time and change the governmental attitude. For a great multitude of small investors, with votes, are bound to suffer if the railways are crowded over the precipice so plainly before them.

Chicago (Ill.) News, November 26, 1913.

As the "Tribune" recently has said, what is needed is a constructive policy, fair to the consumer, who "pays the freight"; to the shipper, whose prosperity depends upon efficient service and no favoritism; to the bona fide investor, and to his partner in the enterprise, the employe.

The fight for railroad regulation, in which the "Tribune" is glad to have had a part, has been won. But, being won, it will be lost if regulation is merely negative or punitive and does not take into account the basic need of the country for an efficient, expanding traffic system and the fundamental terms upon which such a system can be maintained under a capitalistic organization of society.

Chicago (Ill.) Tribune, November 24, 1913.

At the present date there is more right on the railroads' side than there ever has been in the past.

The worst evils of railroad extortion and mismanagement are, we believe, past forever. The most glaring cases of discrimination have been rectified. A large part of the water has been squeezed from their stocks in the recent stock market decline. The railroads are paying more and receiving less for service than ever in the past. In comparison to other industries, public and private, the railroads are probably giving the greatest service per dollar received.

It seems to them, therefore, especially hard while the cost of supplies and labor climbs steadily their schedules of rates are held in place.

Chicago (Ill.) Tribune, January 2, 1914.

It is to be hoped the rate question will not be involved unnecessarily in other considerations, however desirable it may be that the Commission, the Public and Congress should be informed, so as to correct conditions and evolve a wiser policy of railroad regulation. The freight rate decision should be rendered, if possible, pending a thorough reform of the railroads. The one thing that should be insisted upon at this time is that if the advance is granted the increased tax upon the public shall be so disposed as to profit the public.

Decatur (Ill.) Review, November 25, 1913.

The reason the net earnings are less is because of the increased cost of operating railroad properties. Gross earnings are much bigger than three years ago, but all this increase in gross has been taken away, and then more was taken away.

Of course, this situation can't continue. They will have to manage somehow to have increased net earnings with increase in investment—if they can't do this there will cease to be further investment. The point does not need argument; it is obvious.

And of course, a way is going to be found that will permit road managers to go ahead and make investments to pay for needed improvements and extensions. Anything else would not be transportation service, and without this the country could not amount to much.

Elgin (Ill.) Bews, December 5, 1913.

What the people who use the railroads want above all things is good service and increased facilities to meet their increased traffic. They need these now, and are not willing to wait four or five years until valuation of the roads is completed. They can only get these requisites by improving the credit of the roads, so that capital for the improvements can be secured at reasonable rates. The quickest way to improve credit is to increase earnings by raising rates. By thus demonstrating that rate regulation works both ways the Government would inspire investors with confidence and enable railroads to raise money.

Galesburg (Ill.) Republican Register, November 29, 1913.

It is necessary to ascertain how extensive will be the harm and who will be injured in case the companies are forced to face the future with the present rates in force and with demands for increased wages and with the increasing cost of materials.

The man who might have been hurt has probably by this time got out of the way.

This is a case in which one must in order to be fair, give a comprehensive hearing to all sides and not to one alone.

There are a million and five hundred thousand people who are employes of the railroad companies and there are a great many more whose incomes come from dividends and interest and there are the roads themselves to be equipped and maintained and these are factors that ought not to be neglected.

Peoria (Ill.) Herald, November 26, 1913.

Summing up, it was shown that as between 1910 and 1913, there was an increased tonnage, but a decrease in average revenue per ton mile, and an increase in operating revenue of 14.3 per cent, an increase of 23.13 per cent in taxes and a decrease of 13.13 per cent in property investment account. Similar figures were submitted by the other Eastern roads.

The Interstate Commerce Commission is resting under a heavy responsibility to the country. If transportation is to be paralyzed by the rate making authority, the people will suffer with the railroads. On the other hand, an increase in rates will boost the high cost of living.

Peoria (Ill.) Herald, November 26, 1913.

If railroad rates are not permitted to expand with the higher cost of operation, something will break. No arbitrary authority is strong enough to hold down the lid on economic law. Transportation will not be the "goat," neither will "the source" of the income tax be the "goat." All taxes are shifted. In the end the consumer must pay.

Peoria (Ill.) Herald, January 18, 1914.

It is an admitted fact that our railroads are to-day suffering from excess legislation. The railroads are privately owned and publicly managed. The cry for an increase in rates is not without reason.

Everything used in the construction and operation of a railroad has gone up. Labor is higher and is going higher. Material continues to advance.

On the other hand the revenues are fixed by law. The breaking point will have to be reached somewhere. If the revenue is kept fixed and the tension and growth will have to be replaced by retrogression.

It is useless to adopt a revengeful spirit and to take the stand that the railroads must suffer for the sins committed in past years. This is a short-sighted policy and the bad ecects must be borne by the entire public.

Our prosperity and that of the railroads are inseparably joined. We cannot kill one without killing the other. Make the railroads obey the laws, but if rates should be higher to enable them to extend and grow, by all means go at the question from some other standpoint than that of revenge.

Rockford (Ill.) Republican, January 3, 1914.

In the early day of the railroads there was a tendency to ignore the public, its demands and its just protests. Watered stock, arrogance, and high-handed methods developed a slow but heavy burden of resentment, so that when the public got a chance it exacted the "pound of flesh." The railroads seem to have been punished to the full limit of their present responsibility. It would seem to be time to show mercy, and recognize that in all the past mere individuals were not wholly to blame for conditions in which we were all partners.

Already many manufacturers and other shippers are generously conceding that even though it will cost them more to do their business, perhaps the railroads ought to be granted the right to increase to some extent the freight rates. President Wilson is showing a disposition to let the dead bury the dead and is willing to give every business interest the opportunity to demonstrate their ability to work constructively for measured profit while serving the public welfare.

Rockford (Ill.) Star, November 29, 1913.

Is it not time to let the great freight carriers alone? Now that they must behave themselves, let us give them a chance. Let us stop the sort of regulation that demagogues aim at and the "strike" bill that fills the calendars of our legislature. As to permitting them to raise freight rates, the Interstate Commerce Commission will decide for the best general interests.

Rockford (Ill.) Star, December 9, 1913.

An eminent English authority, the Economist, points out how an increase of five per cent in the freight rates in this country, would help business and the arguments appear sound, appealing to all interested in the continuation unabated of the present era of prosperity in this country. It calls attention to the fact that because of the dearness of money for the past two years the railroads have issued short term notes for loans, and that there will be about $500,000,000 of these notes fall due in 1914. It is apparent that if the railroads are unable to refund these loans they will be compelled to stop improvements and reduce upkeep to the lowest possible point. Since the railroads buy more than half of all the steel produced in the country, a cessation of activity on the part of railroads would result in a marked decline in the steel industry, which would result in a sharp setback to industry throughout the country. Its ramifications would be nation-wide.

OHIO.

REPLIES OF A FAVORABLE CHARACTER.

Mayor Frank W. Rockwell of Akron. (Population 69,067.)

(1) The number of people with whom I have come in contact and who could give an intelligent answer to the question, is limited. I believe the sentiment of these people is that the railroads should be allowed to charge rates that, with competitive management, would secure revenues to obtain a reasonable return on the investment, after eliminating that part of the capital commonly known as water.

Mayor, O. F. Rowland of Athens. (Population 5,463.)

(1) I have found the sentiment of this community to be favorable to the five per cent increase asked for.

Secretary, F. L. Hopley, Bucyrus Industrial Association. (Population 8,122.)

While our Association has not discussed the matter in question, and has passed no resolution we feel sure that our members would maintain the "live and let live policy."

Arthur J. Bennett, Secretary, Cambridge Board of Trade. (Population 11,327.)

While no resolution has been passed by our organization on the question of increased rates, it has been discussed among our members at various times and the unanimous opinion is that the railroads should be granted the increase, for the fact is well known that they have been up against increased cost of operating and they must have this increase in order to do business. We are also of the opinion that should the Interstate Commerce Commission grant the increase, it will clear away the clouds that are hanging over business and give a new stimulus to trade and we hope that they will grant it.

Charles A. Stolberg, Mayor, Canton. (Population 50,217.)

(1) I am heartily in favor of the increase in freight rates and I believe it would be of benefit to the citizens of Canton.

Secretary, Canton Commercial Club. (Population 50,217.)

The members of the Canton Commercial Club are very much in favor of the five per cent increase being allowed the railroads. Because of railway retrenchments we have been seriously damaged financially. We have informed the Interstate Commerce Commission that this Club is in favor of granting the railroads the five per cent increase.

Secretary, Cincinnati Business Men's Club. (Population 363,591.)

The following resolutions covering the proposed increase in freight rates in Official Classification territory have been passed by the Cincinnati Business Men's Club:

> Whereas, The whole business of the country depends upon the efficiency of the railroad service, and
>
> Whereas, The railroads have in most parts of the country outgrown their facilities, and business is suffering from a lack of proper and sufficient railroad equipment, and from the inability of the railroads to make necessary extensions, additional terminals and to supply the demands which shippers and new territory can legitimately demand and expect, and
>
> Whereas, This condition of affairs comes from the fact that the railroads are operating on a margin too slender to allow them to meet the demands of the shippers, therefore be it
>
> Resolved, By the Traffic Committee of the Business Men's Club, that to relieve this condition of affairs, which is resulting in a partial paralysis of business, that we petition the Interstate Commerce Commission to allow the railroads, in the Official Classification Territory, to increase their freight rates by a horizontal advance of five per cent, believing that this increase would supply the railroads with revenue sufficient to relieve the existing unsatisfactory conditions. We believe that, as a general principle, the money which the various localities contribute to this cause should be expended in those localities.

Secretary, Cleveland Branch, National Metal Trades Association.

The following resolution has been adopted unanimously by our Board of Directors on the matter of an increase in freight rates:

Whereas, The railways of this country have recently petitioned the Interstate Commerce Commission for an increase in freight rates in Official Classification Territory, an increase of five per cent, and

Whereas, From the facts presented to that Commission by the leading railroad men of this country in support of this petition for such an increase, shows conclusively that the railroads are entitled to the increase, and

Whereas, an increase in freight rates at this time would make and tend for greater stability in all lines of business, would open up further the avenues of trade, and would call for a greater employment of skilled and unskilled labor,

Resolved, That the Board of Directors of the Cleveland Branch, National Metal Trades Association are and hereby declare that they are in favor of the railroads of this country receiving the entire increase in freight rates of five per cent as outlined in their petition presented to the Interstate Commerce Commission of the United States.

Cleveland Branch, National Metal Trades Asso.

J. H. Foster, Pres.
Frederick Metcalf, Vice-Pres.
Franklin Schneider, Treas.
H. J. Smith,
J. H. Francis,
Christian Girl,
C. B. Wilson,
John Hertner,
Directors.

Secretary, Geo. N. Gillette, Columbus Chamber of Commerce. (Population 181,511.)

The matter referred to has had the attention of our Traffic Committee and while we see no reason to oppose the proposed increase in freight rates, no action has been taken approving the same.

Secretary, W. H. Hinman, Elyria Chamber of Commerce. (Population 14,825.)

This Chamber has not taken any action with regard to this question. However, I have heard the matter talked among different persons in the community and it is my personal opinion that the average man in this vicinity would rather favor the increase in freight rates.

Secretary, Walter M. Cooney, Lima Progressive Association. (Population 30.508.)

The following letter forwarded on the third day of January to the Honorable Chairman of the Interstate Commerce Commission, indicates the favorable attitude by this organization towards the proposed increase in freight rates in Official Classification territory:

Lima, Ohio, Jan. 3, 1914.

Hon. E. E. Clark, Chairman,
Interstate Commerce Commission,
Washington, D. C.

Dear Sir:

At a meeting of this organization held last evening, the following resolution was unanimously adopted:

Resolved, That the Lima Progressive Association of Lima, Ohio, wishes to be placed on record as in favor of a reasonable increase of railroad freight rates, same being warranted by the increased cost of operation and advisable because it will result in more railroad construction, better accommodation and safer transportation.

Yours very respectfully,
(Signed) Walter M. Cooney,
Secretary

Secretary, Marion Club. (Population 18,232,)

The following resolutions passed on December 26, 1913, by the Marion Club indicate the attitude of this organization towards the proposed increase in freight rates:

Be it resolved, by the members of the Marion Club, representing every branch of the business interests of Marion, Ohio, that, we, cordially favor the application of the railroads for such reasonable increase of freight rates, as may be necessary to cover the increased cost of operation brought about by the numerous demands on the railroads; that such increase is expedient and desirable, in that, it will enable the railroads to enter upon the making of betterments for the accommodation of the public in the transportation of freight and passengers; and, in that, it will restore confidence in the fairness of our citizenship, which will inspire and encourage further railroad construction, all to the end, that prosperity and good feeling may be fostered and strengthened for the common good and welfare.

Be it further resolved, that this resolution be suitably engrossed, and that copies of the same be transmitted to Hon. John A. Key, Representative, and Hon. Atlee Pomerene, and Hon. Theodore E. Burton, Senators, our representatives in Congress, for their consideration, and a copy to the Interstate Commerce Commission, for its information.

THE MARION CLUB.

December 26, 1913.

By "John A. Schroeter,"
Its President.

Ohio Shippers' Association.

The Ohio Shippers Association has sent the Interstate Commerce Commission a letter with reference to the proposed increase in freight rates which has in part, the following to say:

It is the desire of every member of the association that the proposed increase may be permitted, if the preponderance of evidence shall, in the opinion of the Commission, show that such increase is necessary in order to produce sufficient funds to cover the cost of efficient and economical management and operation of the properties and in addition a reasonable percentage of profit on the investment.

Mayor Adam Frick of Portsmouth. (Population 24,481.)

(1) Personally, I am in favor of the railways being granted rates that will pay dividends, keep up to the required standard

their tracks and equipment, and in addition to be able to sufficiently pay those who perform the actual toil in conducting railway operations.

Secretary, F. P. Chaffee, Steubenville Chamber of Commerce. (Population 22,391.)

The following resolutions relative to the proposed increase in freight rates in Official Classification territory, were passed by the Steubenville Chamber of Commerce on December 5, 1913:

Whereas, The cost of labor and materials of all kinds and rigid restriction have advanced very decidedly in recent years, and

Whereas, The freight rates on the various railroads are claimed to be too low for the proper financing and equipping of such means of transportation, and

Whereas, It is of utmost importance to the shippers to get a quicker handling of freights than is now admissible with the restricted equipment furnished by the various trunk-line railroads, and

Whereas, The Steubenville District handles probably as large a freight tonnage as any district of similar size in the country, and

Whereas, We believe that a reasonable increase in freight rates is just and would encourage better equipment and secure better service from the railroads in the handling of freights, therefore

Be It Resolved, By the Chamber of Commerce of Steubenville, Ohio, that the request of the various railroads to be allowed to put on a five per cent increase in freight rates is a just one and that we recommend to the Interstate Commerce Commission that the same be granted.

Resolved Further, That a copy of these resolutions be sent to the President of the Interstate Commerce Commission, the Chairman of the Central Railroad Association, our Senators and Representatives in Congress, the Secretary of the Chamber of Commerce of the United States, the proper officials of the railroads entering Steubenville and given the local press.

Mayor of Tiffin. (Population 11,894.)

(1) Yes.
(2) Yes.

Secretary, John D. Biggers, Toledo Commerce Club. (Population 168,497.)

The following resolutions were draughted by a special committee of the Commerce Club of Toledo some time ago and forwarded to the Interstate Commerce Commission:

Whereas, Certain railroads in what is known as Official Classification Territory, have in effect requested from the Interstate Commerce Commission permission to advance their freight rates uniformly five per cent, and

Whereas, We believe that the railroads should receive sufficient revenue to enable them to operate successfully under present conditions and provide service adequate to the needs of the commerce of the country, therefore

Be It Resolved, That we, the shippers of Toledo, acting in conjunction with the Toledo Commerce Club, do hereby petition the Interstate Commerce Commission to re-open case No. 3400, or, preferably, to grant a hearing on the new petition without making necessary the formality of the filing of new tariffs by the various railroads in this territory, and

Be It Further Resolved, That we hereby request the Interstate Commerce Commission to grant the uniform five per cent increase in freight rates as promptly as circumstances will permit, providing the representatives of the railroads can, and do, present to the Interstate Commerce Commission, such facts and figures as will prove the necessity of such increase in revenue.

Mayor H. M. Gee of Van Wert. (Population 7,157.)

(1) I am sure that our business men are in favor of the increase.

REPLIES OF AN UNFAVORABLE CHARACTER.

Mayor L. Williams of Canal Dover. (Population 6,621.)

(1) No.
(2) No.

Mayor W. A. Schmaltz, of Defiance. (Population 7,327.)

(1) In interviewing several of the large shippers of our city, I find that they are against any increase in freight rates.

Mayor Edw. H. Kuhn of Gallipolis. (Population 5,560.)

(1) No.
(2) No.

Mayor Fred A. Hinkel of Hamilton. (Population 35,279.)

(1) Speaking from the standpoint of the majority of the people of the city of Hamilton, I would say that they are opposed to an increase in freight rates. They view it from the standpoint of the consumer who must in the end foot the bill by the way of increased cost in commodities.

Mayor Wm. D. Robb of Lima. (Population 30,508.)

(1) I am opposed to such increase.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Vincent S. Stevens, Akron Chamber of Commerce. (Population 69,067.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Theodore Hall, Secretary, Ashtabula Chamber of Commerce. (Population 18,266.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Barberton Chamber of Commerce. (Population 9,410.)

No action has been taken by the Chamber of Commerce for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Earnest Thompson, Bellefontaine Industrial Club. (Population 8,238.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, R. R. Parkhurst, Bellevue Chamber of Commerce. (Population 5,209.)

No action has been taken by this Chamber of Commerce for or against the five per cent increase in freight rates in Official Classification territory.

Charles A. Stolberg, Mayor of Canton. (Population 50,217.)

(1) I am unable to answer your question as I have heard no expressions from business men regarding this matter.

Secretary, L. E. Deuble, Canton Business Men's Association. (Population 50,217.)

No action has been taken by this organization for or against the proposed five per cent increase in freight rates in Official Classification territory.

Newton D. Baker, Mayor, Cleveland. (Population 560,663.)

(1) I regret to say that I do not know enough about the facts in connection with the case of the railways for higher freight rates, to express an opinion.

Secretary, Cleveland Chamber of Industry.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Edward Hobday, Cleveland Industrial Association.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Alfred H. Stratton, Salem Chamber of Commerce. (Population 8,943.)

No action has been taken by the organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Manager, G. L. Cory, Springfield Traffic Bureau. (Population 46,921.)

Our membership is somewhat divided in respect to the increase in freight rates in Official Classification territory, and it seems to be the prevailing opinion that the facts as developed by the Interstate Commerce Commission should govern and our people are willing to abide by the conclusion reached.

H. E. Rogers, Secretary, Wellington Board of Trade.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

OHIO EDITORIAL COMMENT.

Cincinnati (O.) Commercial Tribune, May, 1913.

It is the fashion to berate the railroads, but it should be remembered that the managers of them are subjected to the same limitations which apply to all business men. It is believed that the Interstate Commerce Commission will recognize the new condition.

Cincinnati (O.) Enquirer, December 20, 1913.

The serious condition the railroad world is facing has already been recognized and met in several countries of Europe, where the Governments have advanced all rates on passengers and goods. In our country the question now is not so much as to change of ownership as to a living rate for service under present control. Evidence of some of the roads laid before the Interstate Commerce Commission indicates that they must have better rates if they are to continue business outside of receiverships. The roads north of the Potomac and Ohio Rivers and east of the Mississippi, ask for a five per cent increase on freight rates, which would add between thirty-five and forty million dollars to the revenues of the roads pleading. In three years these lines have expended over $600,000,000 in additions and improvements, while their net income has decreased more than $16,000,000 because expenses of operation have increased faster than operating revenues. Said one of the prominent men testifying: "We are suffering from slow starvation."

Cincinnati (O.) Times Star, December 27, 1913.

A sentiment in favor of the Interstate Commerce Commission granting the five per cent increase in freight rates, asked for by the railroads, is apparently growing among Cincinnati business men. Although the Cincinnati business community has been in the forefront of the fight for improved switching service, better freight rates, or other advantages from the railroads, yet there is now a widespread feeling in favor of granting the roads their request for the five per cent increase.

Columbus (O.) Dispatch, January 26, 1914.

There are those who find in the President's latest address to Congress signs of approval of the request of the railroad companies for an increase of freight rates. By these it is felt that the Interstate Commerce Commission will take more and do something, even, in the absence of legal restraint upon stock and bond issues, to relieve the situation. But the President is not autocrat. In his words with regard to the railroads, he has simply reflected a very general feeling that, between rate restriction and wage increase, the companies have been caught and crippled. If the President feels that the time has come for granting a measure of relief, he is simply making an estimate that the Commissioners themselves and others are as able to make as he.

Sandusky (O.) Register, December 10, 1913.

It does not require evidence to prove that increased expenses in pay rolls mean a reduction in the revenue of the roads unless rates are increased, or running expenses are reduced in other departments of the service. Railroads cannot operate without revenue. They cannot pay running expenses much less interest, taxes, maintenances and improvements—they cannot provide increased facilities for the public, more cars, engines and sidings to take care of increased business demands without more money coming into their treasuries.

MASSACHUSETTS.

REPLIES OF A FAVORABLE CHARACTER.

Mayor Herman A. MacDonald of Beverley. (Population 18,650.)

(1) Yes; especially in New England, where the railroads are in a bad financial state. To be reduced again, however, when conditions warrant so doing.

(2) I should say, Yes

Mayor John F. Fitzgerald of Boston. (Population 670,585.)

(1) I believe Boston favors a proper increase of railroad rates and it is my opinion that five per cent is not too great an increase.

(2) I believe the prosperity of the whole country largely depends upon proper treatment of the railroads and action by the Interstate Commerce Commission should be taken immediately.

William A. Hart, Secretary, Fall River Chamber of Commerce. (Population 119,295.)

At a meeting of the Board of Directors on February 3d, a report was adopted favoring the five per cent increase for which the railroads are asking. A copy of this vote was sent to the Interstate Commerce Commission and the following is a copy of the committee's resolutions on the subject:

To the Board of Directors,
Chamber of Commerce,
Fall River, Mass.

Gentlemen:

The Transportation Committee is in favor of requesting the Interstate Commerce Commission to allow the transportation companies to increase the freight rate the five per cent as per petition for the following reasons:

First—That transportation rates are lower by forty per cent than in any other country.

Second—That transportation companies must have adequate income to meet current expenses, cost of up-keep and improvements, and also pay to stockholders a reasonable profit on their investment.

Third—That the 1,500,000 men employed by the transportation companies are continually asking for and receiving increased compensation, and that all materials used by said companies are substantially higher than at any previous time.

Fourth—That business interests are continually calling for improved terminal and transportation facilities.

Fifth—That the increase asked for is so slight that no one will be seriously affected, and last that the prosperity of the transportation companies is absolutely necessary for the prosperity of the country at large.

Respectfully submitted,
Transportation Committee.

Mayor of Danvers. (Population 9,407.)

(1) Yes.

(2) Yes.

Secretary, J. E. Barber, Franklin Business Men's Association. (Population 5,641.)

While no action has been taken by our Association, our business men are a unit in believing that a reasonable advance should be permitted, and that at once.

Secretary, Daniel N. Casey, Haverhill Board of Trade. (Population 44,115.)

The Transportation Committee of this Board has endorsed the recent resolution of the Boston Chamber of Commerce regarding the railroads' situation. We believe that a moderate increase without discrimination, would be fair and we would be willing to accept it, providing it does not impose too hard a penalty upon the manufacturing interests.

Secretary, George E. Rex, Acting Secy., Lawrence Chamber of Commerce. (Population 85,892.)

I believe that I can safely say that our people are not opposed to granting the railroads a reasonable advance in rates, but inasmuch as we are located on the Boston and Maine, which has been granted a scale of advances much greater than five per cent by the Interstate Commerce Commission, and as our people have generously agreed to this advance, it does not seem that the proposed advance of five per cent can affect the people of this vicinity.

W. H. Day, Jr., Mgr. Trf. Bureau, Lynn Chamber of Commerce. (Population 89,336.)

The general five per cent increase asked for by Eastern roads we are heartily in favor of, believing that the carriers are entitled to a revenue sufficiently remunerative to meet their ever-increasing demands and maintain that efficiency in service which is so essential and desirable both to the shipper and the receiver.

Mayor P. J. Moore of Pittsfield. (Population 32,121.)

(1) Yes.

(2) Yes.

Secretary, H. T. Hyde, Southbridge Board of Trade. (Population 12,592.)

Our organization has taken no official action regarding the proposed increase in freight rates. I am sure, however, that the general sentiment and attitude of the majority of our members would be to endorse such proposed increase.

Traffic Manager, Albert Snyder, Springfield Board of Trade. (Population 88,926.)

The following resolution has been passed by the Board of Directors of the Springfield Board of Trade, covering the railways' situation in regard to the proposed increase in freight rates:

> Whereas, A decision has been reached between the Federal Government and the New York, New Haven & Hartford Railroad in regard to the complete separation of the Boston & Maine System from the New York, New Haven & Hartford System,
>
> We, the directors of the Springfield Board of Trade, upon the recommendation of our Traffic and Transportation Committee, do hereby
>
> Resolve, That it is necessary for all commercial and industrial interests of New England to unite in supporting the railroads, which will provide quick transportation, immediate delivery of goods, and satisfactory and ample train service, and which shall have adequate terminals, modern equipment and rolling stock. Be it further
>
> Resolved, That in view of the condition of the Boston & Maine Railroad, and in order that this railroad may be able once more to maintain satisfactory service, it seems desirable that there should be a complete reorganization, and that the railroad officials should lend every effort to relieve the Boston & Maine Railroad of all burdensome contracts and expenses, and that the Boston & Maine Railroad should be conducted as an independent New England railroad first and foremost for the interest of New England. And be it further
>
> Resolved, That the United States Government should establish at once a more equitable basis of payment to the railroads for carrying the Parcel Post, and that we request our Representatives in Congress to use all effort to bring about this readjustment. And be it further
>
> Resolved, That the public should be willing to recognize the existing conditions and to cooperate to the fullest extent. And be it further
>
> Resolved, That the Board of Directors of the Springfield Board of Trade hereby express the willingness of this organization to co-operate in every instance, through committees or otherwise, in bringing about a satisfactory solution of this problem.

H. R. Kingsbury, Secretary, Westfield Board of Trade. (Population 16,044.)

No formal resolutions have been passed by us upon the matter referred to, but at our last meeting it was voted to acknowledge your communication and there was a very general expression of the opinion that the railroads should be permitted to have in force such rates as would be sufficient to provide efficient and satisfactory service and at the same time enough income to return to the investor a reasonable and fair interest upon his investment.

Mayor of Whitman. (Population 7,292.)

(1) Yes, as to east or westbound through rates. Local class rates should be revised before being admitted to any increases.

(2) If the increase is granted we think the public is not opposed to the roads securing the benefits of such advances as quickly as possible.

REPLIES OF AN UNFAVORABLE CHARACTER.

Mayor of Franklin. (Population 5,641.)

(1) No.

Mayor John H. Wood of Holyoke. (Population 57,730.)

(1) I am informed that the Holyoke Board of Trade voted to protest against the proposed increase in Official Classification territory, as it felt that our manufacturers would be seriously affected by the proposed rates. Holyoke imports a great amount of raw material and ships it away as finished product. The Board of Trade also feels that in view of the petition of the Boston and Maine for an increase in their class rates and a readjustment in their commodity rates, it would greatly affect Holyoke and as such increases have been practically decided upon, a further increase of five per cent would be detrimental to the industrial and business life of our city.

E. L. Taber, Secretary, Holyoke Board of Trade.

Our organization has gone on record as being opposed to the proposed increase in freight rates by all railroads in Official Classification territory. This proposed increase affects our manufacturers both on the incoming raw material and on the outgoing manufactured material.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Wm. H. Gray, Cambridge Board of Trade. (Population 104,839.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, J. F. McLaughlin, Leominister Board of Trade. (Population 17,580.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Herbert E. King, Mansfield Board of Trade. (Population 5,183.)

No action has been taken by this organization for or against the proposed increase in freight rates in Official Classification territory.

Secretary, John J. Kennedy, Northampton Board of Trade. (Population 19,431.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, B. A. Rowe, Norwood Board of Trade. (Population 8,014.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

President, Geo. H. Southard, Jr., Pittsfield Board of Trade. (Population 32,121.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Plymouth Commercial Club. (Population 12,141.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Geo. O. Wentworth, Stoughton Board of Trade. (Population 6,316.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Fred. E. Thompson, Westboro Board of Trade. (Population 5,446.)

While no action has as yet been taken by our organization in reference to the proposed advance in freight rates, I feel that if it was, they would endorse the proposed advances.

A. F. Evans, Corresponding Secretary, Winchendon Board of Trade. (Population 5,678.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Winthrop Magee, Chrmn. Board of Selectmen, Winthrop. (Population 10,132.)

(1) Having no freight facilities, we are not in a position to reply to your question.

Secretary, A. J. Pilling, Winthrop Board of Trade.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

MASSACHUSETTS EDITORIAL COMMENT.

Boston (Mass.) Advertiser, May, 1913.

There has been a cessation of new territorial development by building new lines of road.

Boston (Mass.) Advertiser, November 28, 1913.

One of the fundamental questions to be decided is whether the railroads, because they are under Government control, are to be refused the privilege of meeting their increased expenses through higher prices for their product, which is transportation, while all other corporations, whose operations are not regulated by the Government, are at liberty to advance prices as far as the public will submit. In other words, it is a question whether Government regulation means simply that prices shall be held down, without regard to the conditions.

The Arbitration Board has stated that with the increased wages and cost of materials the railroads should have some means of recuperation, and it is thought that this may have some effect upon the Interstate Commerce Commission, though the fact must be known to the latter, without the endorsement of the Arbitration Board. By dividend reductions most of the railroads can survive even though they are not permitted to advance rates, but the reduction or suspension of dividends would mean that they could obtain additional capital only on unsatisfactory terms, and their operations would be curtailed in consequence.

Boston (Mass.) Commercial, December 20, 1913.

It is an encouraging symptom that Chambers of Commerce are beginning to go on record in favor of the Interstate Commerce Commission granting to the railroads the privilege of increasing freight rates. These organizations, made up for the most part of middlemen and retailers whose commissions and profits are the largest items in the high cost of the country's commodities to consumers, have been chiefly responsible for the heckling to which the railroads have been subjected during the past few years.

Now these middlemen are beginning to realize that they are likely to have a corpse on their hands, that the vivisection is being carried too far, and that by wrecking the credit of the great transportation systems they are destroying at one stroke the facilities of trade and the buying power of the public.

Boston (Mass.) Evening Transcript, November 25, 1913.

Though it is only a comparatively small portion of the public that has a direct financial interest in the prosperity of the railroads, it is the entire public that is helped or hurt by the character of service rendered. It is not alone the directors or the stockholders who are concerned with good roadbeds, strong bridges, comfortable cars and regular schedules, but everyone that avails himself of these public utilities, whether in a greater or less degree. The controversy, therefore, is not confined to the railroads and the shippers, but involves almost our entire people. They want to see the railroads render good and safe service, and there seems at present no better way to secure it than by granting the petition for a rate increase.

Boston (Mass.) Globe, December 19, 1913.

The stockholders are only a small portion of the community which is helped or hurt by the prosperity or adversity of our railroads. This point was well brought out in yesterday's "Globe" by Mr. J. H. Hale, who has been called the "Peach King" of Connecticut. A producer whose goods are freighted on roads from the South and from Connecticut to the Boston market and a business man who thoroughly understands the railroad situation, he appreciates the urgent fact that our railroads need money in order to perform the service required of them by the public and that the way to obtain that money is to increase the freight rates.

If New England is to grow, and efficient railroad service is necessary, not only for our industrial concerns, but for our farmers, big and little. Mr. Hale advises the farmers of New England to unite in requestiong that the railroads be allowed to charge higher rates. Higher rates spell prosperity. They mean the development of the great agricultural possibilities of this section of our great country.

Boston (Mass.) Post, May, 1913.

The public will have to chip in a bit for the increased pay to employes, and we believe it is perfectly willing to.

Brocton (Mass.) Times, May, 1913.

We are learning, little by little, we cannot have all the good things of life without paying the freight.

Fall River (Mass.) News, May, 1913.

These institutions are friends of the people and can only prosper as they serve the needs of the people. But the people must pay for the service rendered.

Fall River (Mass.) News, November 28, 1913.

Since the business depends upon the support of private capital which can only be obtained if there is a prospect of a fair return, and since the business must go on in any event, it follows that either the Government must run the railroads or they must be allowed to make a fair profit in the transportation of freight and passengers. * * *

It is now up to the Government, which has assumed the rate-regulating power, to exercise it in the interest of fairness to the railroads, as well as to the public. Rates may be raised, as well as lowered, and must be if a fair return on the investment can not otherwise be secured. The country must have more and better railroads, and no power of Government can force new capital into the road or keep old capital there if it can be more profitably employed elsewhere.

Farmingham (Mass.) Tribune, January 13, 1914.

A raise in railroad rates would re-establish confidence in the willingness of the public to permit a fair dividend on invested funds. It would form a basis of prosperity on which the work of economic reconstruction could go on. Railroad expenses have increased much faster than earnings.. It is by no means clear, even with the utmost economy and good management, that a fair dividend can be paid on the present cost of labor and equipment.

Lowell (Mass.) Courier Citizen, January 12, 1914.

There is no doubt that the advance would start the railroads buying, and that would give the much-needed impetus to industry. The sooner the Commission decides to allow it the better for the country. If it is refused things will go on as they are, and that is not in vigorous fashion.

New Bedford (Mass.) Mercury, May, 1913.

Public support has appeared to be behind the demands of the coal miners from time to time and if the public was a good sport it would not grumble at the higher prices of the commodity that are a direct result. It is said of the railroad situation, that if the corporations were not under duress they could supply their labor demands without trouble. The public is responsible for the artificially high costs of living and it should be willing to stand the gaff of high prices which are contingent upon high wages.

New Bedford (Mass.) Mercury, November 29, 1913.

From the fact that up to the present time there has been no antagonism on the part of shippers, such as was displayed three years ago, it is reasonable to assume that the action taken this week by the Chicago Association of Commerce fairly represents the attitude of the public. That body passed a resolution to the effect that it was "in sympathy with the plan of having the question adjudicated by the Interstate Commerce Commission, that body to determine from the facts the necessity for proposed advance." That the railroads must raise large sums for needed improvements was only recently pointed out by Chairman Clark, of the Interstate Commerce Commission.

Newburyport (Mass.) Herald, December 20, 1913.

If persistent rumor means anything, the Eastern railroads are to be allowed a rate increase by the Interstate Commerce Commission. That some such increase is badly needed seems to be pretty well agreed by all parties.

No. Adams (Mass.) Transcript, May, 1913.

The railroads are entitled to fair play, and the people must see that they have it or prepare to share the disastrous consequences which must ensue in the absence of fair play.

Springfield (Mass.) Homestead, November 29, 1913.

The railroads are insisting that they are hard hit, that they really must have money in order to carry on business properly at the old stand. If the assertion is true, and it seems probable that it is, a calm presentation of the facts—and they must be facts—will react upon the Interstate Commerce Commission directly or through public opinion and allow the needed increase in rates.

Springfield (Mass.) News, December 16, 1913.

Evidently the public is being prepared for an increase in railroad freight rates. The market reports all indicate wide hesitancy in business and this state of affairs is attributed to the alleged poverty of the railroads. There are indications too that the plea on behalf of the railroads is on the point of being heeded by the Interstate Commerce Commission.

Springfield (Mass.) Republican, May, 1913.

Much has been made of the claim that greater efficiency in running railroads would increase their revenues, but, unless we are to assume the grossest kind of laxness hitherto, this alone would not produce earnings sufficient for the emergency. We cannot be justified in regulating railroads to death. The railroads are likely to find the Interstate Commerce Commission much more favorably disposed than once toward some measure of relief.

Taunton (Mass.) Gazette, December 13, 1913.

One thing appears to be certain in the varied elements composing the Eastern railroad muddle and that is that the roads must have a greater income in order to meet their running expenses, to say nothing about paying dividends.

Even if we are obliged to admit that there have been grave errors in management which have proved very costly the increase in operating expenses along thoroughly legitimate and well managed lines has been so great that the income of the property must rise in order to keep these big properties from continuing to be seriously handicapped.

An increase in freight rates appears to be a moral certainty in the future.

How much this increase may be is uncertain but it is likely to be five per cent or more.

If we are to have railroads we will have to pay a sum sufficient for their proper maintenance when we use them and watch to see that their business, so far as public interest is concerned, is properly managed.

Worcester (Mass.) Gazette, May, 1913.

The railroads cannot be regulated out of existence.

Worcester (Mass.) Gazette, November 28, 1913.

There are good reasons for believing also that the increase in freight rates may be allowed the Eastern railroads as the result of the inquiry now on. Whether the five per cent asked for will be granted is another question to be determined by the future. It is evident that the expenses of railroads cannot be made to increase by Government edict and demands of both public and employes without making necessary an increase in the charges from which they make their revenue. When a railroad faces such conditions it is in precisely the same condition as an individual who faces an increase of a cost of living all along the line.

MICHIGAN.

REPLIES OF A FAVORABLE CHARACTER.

Martin Herald, Mayor, Dowagiac. (Population 5,088.)

(1) I have consulted with the business men of this city and can say that the proposed advance in freight rates meets with their approval.

(2) So far as I know it is favorable.

J. C. Knox, Secretary, Michigan Hardwood Manufacturers' Association, Cadillac. (Population 8,375.)

Your letter to the Secretary of the Board of Trade of this city has been referred to the writer for reply. Speaking more particularly of the Michigan Hardwood Manufacturers' Association, representing large lumber interests, it is the opinion of many of our more important members that the railroads should be allowed the advance of five per cent in Official Classification territory. While our Association has not gone on record as a whole as favoring the advance, owing to the fact that there are some members who oppose it, I think I can safely say that they are willing to abide by the decision of the Interstate Commerce Commission and that there will be no opposition by any of our members. It is hoped that the matter will be settled satisfactorily to the carriers and shippers alike, as we are convinced that the prolonged agitation of this subject is not favorable to either shipper or carrier and that the sooner the matter is adjusted the better it will be for both.

John Comin, Secretary, Three Rivers Commercial Club. (Population 5,072.)

In response to your request the matter of an increase in freight rates was brought before the Commercial Club and the following resolution passed:

"WHEREAS, In recent years, the railroads have shown a disposition to comply with the wishes of the public in furnishing efficient service at reasonable rates, and, whereas, a heavy increase in expenditures for new equipment and an increased wage are imperatively demanded, therefore, be it

"*Resolved,* That it is the sense of this Club that the increase in freight rates recently asked by the railroads in their petition to the Interstate Commerce Commission should be granted."

Secretary, Michigan Manufacturers' Association, Detroit. (Population 465,766.)

The following resolutions with reference to the proposed increases in freight rates in Official Classification territory were passed by the Detroit Manufacturers' Association May 22,1913:

Resolved, That the Board of Directors of the Michigan Manufacturers' Association does hereby express its tentative approval of the proposal of the Railroad Carriers in Official Classification Territory for a five per cent increase in freight rates. The Board is not advised as to the present facts upon which this proposed raise is based, but is impressed with the idea that the expenses of the carriers have greatly increased and their net earnings have been decreased. The Board is of the belief that a horizontal increase of five per cent is preferable to increase on particular traffic in certain and particular localities, or increases of charges for switching and side-track service and other service incidental to transportation, since the latter tend to produce discrimination. It is therefore

Resolved, That a copy of this resolution be distributed among all Michigan manufacturers and their opinion and views upon the proposal of the carriers be collected and reported to the Board in order that it may, with that information before it, take definite action for or against the proposal of the railroads.

Mayor C. S. Mott of Flint. (Population 38,550.)

(1) I think the general consensus of opinion regarding railroads is that while the troubles the railroads find themselves in at the present time, are undoubtedly due to the way their business has been managed in the past, still the pendulum has been swung pretty far the other way and some of the largest receivers and shippers of freight with whom I have talked are of the opinion that the carriers are entitled to a reasonable increase—such as five per cent, provided it is general in its application; that is, without discrimination for or against any particular articles or classification.

John H. Reicherdt, Secretary, Grand Haven Commercial Association. (Population 5,856.)

While this matter has not been acted upon at a regular meeting, we venture to say in behalf of our organization that they would be favorable to permitting such an increase on the part of the Interstate Commerce Commission.

Mayor F. J. Bowden of Houghton. (Population 5,113.)

(1) I wish to state that the majority sentiment of this community recognizes the revolution in railroading brought about by the active work of the Interstate Commerce Commission which has resulted in so many improvements for the benefit of the public, such as steel cars, block systems for protection of trains and the consequent improvements necessary in the power to handle these heavier trains, all of which has placed additional burden in the way of operating expenses for which no provision has been made in increasing operating revenues, other than what might have been brought about by the increase of business in growing communities. This naturally leaves the railroads without the usual relief that a commercial concern would have in raising its prices to offset improvements in the class of goods offered for sale. Therefore, this community may be registered as in favor of granting the increased rates requested by the railroads as the general sentiment is such that a small advance would work no hardship on any particular individual and would no doubt rebound in better service and improvements to a large number of communities and undoubtedly stimulate business in general.

Mayor of Iron Mountain. (Population 9,216.)

(1) Yes.

(2) Yes.

Mayor of Kenosha.* (Population 21,371.)

(1) I have taken up the matter of the proposed increase in freight rates with the largest shippers and business men in Kenosha and find they are favorable to the increase of five per cent.

(2) In answer to question No. 2, it was unanimously declared that the increase be granted promptly, leaving for future consideration any individual rate adjustments that may be necessary.

R. R. Darwin, Trf. Comr., Lansing Chamber of Commerce. (Population 31,229.)

The Manufacturers' and Jobbers' Club of Lansing, represented by the Chamber of Commerce, has declared themselves in favor of the five per cent horizontal advance in freight rates upon such commodities as will bear this advance, but making no specific restrictions. They would not, however, be in favor of this advance being granted without a proper investigation by the Interstate Commerce Commission.

Mayor of Marshfield. (Population 5,783.)

(1) We believe it is not any matter of opinion to decide this great question, but rather that it rests upon the cold mathematical facts. However, we feel kindly disposed as a commercial body to the granting of this increase in rates on the general principles that you cannot reasonably expect the roads to meet a twenty-five per cent increase in operating expenses on the old rates. The increased price of labor alone would warrant a change in freight rates.

Secretary, Louis H. Conger, Muskegon Chamber of Commerce. (Population 24,062.)

This organization has not as yet adopted any attitude on the proposed increase of freight rates. Muskegon is a city of large shipping interests, and those who make good use of the transportation facilities feel that any increase in rates which will be productive of better service, is entirely warranted. We do not, however, believe in any increase which will pay interest or wipe out funded debt incurred through stock watering and other high financing.

Mayor of South Milwaukee. (Population 6,092.)

(1) I personally believe the five per cent advance is a good move.

(2) My own opinion is, that it should be granted at once, judging from the reports of the railroads in this vicinity.

Mayor Geo. H. Arnold of Three Rivers. (Population 5,072.)

(1) I think that the sentiment of this community is in favor of fairness and will leave the settlement of the matter to Government officials.

Mayor of Waukesha. (Population 8,740.)

(1) Yes.
(2) Yes.

REPLIES OF AN UNFAVORABLE CHARACTER.

Mayor A. W. Chase of Adrian. (Population 10,763.)

(1) No. The feeling is very much against granting an increase in rates.

Mayor S. Harper of Bay City. (Population 45,166.)

(1) No.

Mayor James Johnston of Cadillac. (Population 8,375.)

(1) No.

Fred W. Green, Mayor of Ionia. (Population 5,030.)

(1) It is my belief that the sentiment of the business men of our city is very much opposed to any increase in freight rates until we know the actual value of the railroads.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, John F. Wilkinson, Alpena Chamber of Commerce. (Population 12,706.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Chas. W. Ward, Battle Creek Chamber of Commerce. (Population 25,267.)

No resolution has been passed by our Board of Directors regarding the proposed increase in freight rates. While our directors may be favorable to making such concession to the railways, they are not sure that the sentiment of the community, which a resolution from this purport would express, would really justify their taking action favorable to the proposition.

Mayor of Fond du Lac. (Population 18,797.)

(1) I believe the Interstate Commerce Commission entirely able to determine the case referred to.

Secretary, Ironwood Commercial Club. (Population 12,821.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Paul A. Leidy, Jackson Chamber of Commerce. (Population 31,433.)

No action for or against the increase of five per cent in freight rates in Official Classification territory has been taken by this organization or by its Transportation Committee.

Secretary, F. C. Butler, Kalamazoo Commercial Club. (Population 39,437.)

Our Club has taken no action upon the proposed increase in freight rates, other than to protest to the Interstate Commerce Commission against advancing four specific rates which we consider excessive as compared with rates on the same commodities to other points. I believe I speak the sentiment of all members when I say we do not object to the five per cent increase, providing the railroads prove to the satisfaction of the Interstate Commerce Commission that the increase is necessary.

Secretary, Henry C. Hutton, Ludington Board of Trade. (Population 9,132.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Clifton D. Jackson, Mount Clements Business Men's Association. (Population 7,707.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Mayor of Rhinelander. (Population 5,637.)

(1) My opinion is that the Interstate Commerce Commission should go into the details of the cost of operation, maintenance, etc., and then render their decision accordingly.

John G. Straub, Mayor, Traverse City. (Population 12,115.)

(1) I presented your letter at a meeting of our business men but could not get any action in the matter.

Mayor, Wyandotte. (Population 8,287.)

(1) So far as I can observe there has has been no expression of sentiment one way or the other.

INDIANA.

REPLIES OF A FAVORABLE CHARACTER.

Mayor Frank Callahan of East Chicago. (Population 19,098.)

(1) It is my belief that a large majority of the business men of this district, knowing as they do, that the cost of operating their own business has materially increased in the last few years, and believing also that

the cost of operating railroads has increased in the same proportion, that the proposed increase of five per cent should be granted to the carriers, and that the failure on the part of the Government to grant such increase, has created depression in all lines of business.

Mayor T. E. Smith of Elkhart. (Population 19,-282.)

(1) Business men and others believe that the railroads should be allowed to increase their freight rates as everything they employ in operation has increased in cost. Their request is considered by our citizens but just.

(2) The increase should be promptly granted, leaving for future consideration, such other matters as you refer to.

Indiana Bituminous Coal Operators' Association of Terre Haute.

This organization has addressed the Interstate Commerce Commission strongly urging them to grant the railroads an increase in freight rates on all commodities including coal.

Secretary, M. E. Crites, Indiana Harbor Commercial Club.

On January 23d, we sent a notice to the Interstate Commerce Commission advising them of the fact that our organization is in favor of granting to common carriers their petition for an increase of five per cent of their present freight rates. Our organization represents all classes of shippers from steel manufacturers to small retailers.

Secretary, Wm. H. Howard, Indianapolis Board of Trade. (Population 233,650.)

The following resolution has been adopted at a meeting of the Governing Committee of the Board of Trade of Indianapolis:

Resolved, That the Indianapolis Board of Trade refrain from opposition to the proposed increase of five per cent in freight rates, if the Interstate Commerce Commission decides it to be just.

Secretary, John Hauck, Indianapolis Building Contractors' Association and Builders' Exchange.

Our Association has taken no official action in this matter. However, in canvassing the situation, several of our members have expressed themselves as looking with favor on the efforts of the railroads to obtain an increase in rates.

Albert V. Weigel, Secretary, Lafayette Commercial Club. (Population 20,081.)

The Lafayette Chamber of Commerce has unanimously adopted a resolution favoring the granting of the increase in freight rates to the railroads by the Interstate Commerce Commission. The resolution was preceded by a preamble which stated in brief:

That the industrial progress of the country depended largely upon the progress of the railroads; that we realize that the railroads have suffered from high handed methods of financing and, in some instances, mismanagement; that they are not always operated to the greatest possible efficiency, and that the public has been the greater sufferer from these faults; but that, nevertheless, we believe that the railroads are coming to realize a greater obligation toward the public, and that the granting of the increase will help them in their desire to reach a greater efficiency and give better service.

The resolution was as follows:

Resolved, That the Lafayette Chamber of Commerce respectfully petitions the Interstate Commerce Commission to grant the request of the railroads for a five per cent increase in freight rates during such time as will in the judgment of the Commission enable the railroads to make their necessary improvements, thereby contributing greatly to the welfare of the country.

It is the sense of this Chamber of Commerce that the increase in the freight rates will not place a burden of any appreciable extent on any customer, and that the granting of the request will give a stimulus not only to the railroads but to its allied industries and the country at large.

A. E. Werkhoff, Secretary, Lafayette Retail Merchants' Association. (Population 20,081.)

While we have talked this matter over, as an organization we have made no ruling and have taken no action but are willing to abide with whatever action or rulings our organization sees fit to advance. We understand that the Lafayette Chamber of Commerce has made a ruling in favor of the proposed increase in freight rates.

Mayor Frank V. Guthrie of Logansport. (Population 19,050.)

(1) This city is a railroad center and, in my opinion, is in favor of such increase.

(2) Yes.

Logansport (Ind.) Republic, December 27, 1913.

But aside from these questions, it is likely that the majority of conservative men will agree that the five per cent increase is not excessive and is needed by the road under the increased cost of maintenance.

Secretary, H. R. Irhie, Terre Haute Chamber of Commerce. (Population 58,157.)

The following resolutions have been passed by the Terre Haute Chamber of Commerce relative to the proposed increase in freight rates now pending before the Interstate Commerce Commission:

Whereas, The railroads in the so-called Official Classification Territory have filed with the Interstate Commerce Commission a proposal for a general advance of five per cent in freight rates, and

Whereas, The question is now up for hearing before the Interstate Commerce Commission, and

Whereas, Long continued uncertainty as to the final outcome will be detrimental to the commercial activities of the country, now, therefore, be it

Resolved, That the Board of Directors of the Terre Haute Chamber of Commerce favors a horizontal increase of freight rates in Official Classification Territory, but opposes the proposed increase of ¼c per 100 lbs. minimum or five cents per ton. And be it further

Resolved, That a copy of these resolutions be sent to the Interstate Commerce Commission.

REPLIES OF AN UNFAVORABLE CHARACTER.

Mayor of Bedford. (Population 8,716.)

(1) The sentiment of this community is decidedly against the increase.

Samuel F. Spohn, Mayor, Goshen. (Population 8,514.)

(1) So far as it can be asserted the general sentiment of this community is opposed to the five per cent increase in freight rates. The ratio being about three to one in opposition.

Commissioner J. Keary of Freight and Traffic Division, Indianapolis Chamber of Commerce. (Population 233,650.)

Last May a conference was held in Indianapolis between a committee of executive traffic officials of the carriers and committees representing the Board of Trade and the Chamber of Commerce, at which this proposed increase in rates was discussed. Later the subject was considered by the Executive Committee of this Chamber and the conclusions reached are expressed in the following resolution:

> Resolved, That as to interstate rates, the Indianapolis Chamber of Commerce has moved to oppose the proposed advance until the question has been submitted to and determined by the Interstate Commerce Commission, embracing in their investigation the factors of cost of handling and efficiency and economies in operation.

Mayor of Madison. (Population 6,934.)

(1) No.

Secretary, Business Men's Club, Muncie. (Population 24,005.)

The general attitude of our Club is against the proposed advance. Of course, there is some diversity of opinion.

Mayor of New Castle. (Population 9,446.)

(1) No.

Mayor of Terre Haute. (Population 58,157.)

(1) No.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Wallace B. Campbell, Anderson Commercial Club. (Population 22,476.)

No action has been taken by this organization for or against the proposed increase of five per cent i nfreight rates in Official Classification territory.

Secretary, H. R. Isenhower, Bloomfield Commercial Club.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, W. N. Achenbach, Columbus Commercial Club. (Population 8,813.)

No action has been taken by this Club for or against the increase of five per cent in freight rates in Official Classification territory.

Secretary, Frank B. Riller, Crown Point Business Men's Association. (Population 2,526.)

No action has been taken by this Association for or against the proposed increase of five per cent in freight rates in Official Classification territory.

J. C. Keller, Secretary, Evansville Business Men's Association. (Population 69,647.)

No action has been taken by the organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, J. C. Keller, Evansville Manufacturers' Association.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Chas. W. Foulks, Goshen Commercial Club. (Population 8,514.)

Our organization has not even discussed this matter and we do not know the attitude of our members. The railroads should, however, be given favorable conditions for improper returns on investments cripple or hamper them, and naturally means a curtailment in expenses.

Secretary, Greencastle Commercial Club. (Population 3,790.)

No action has been taken by our members. Personally, I feel that the railroads must make money to enable them to give the public good service. We do not feel competent, however, to say what rates are reasonable and just.

R. E. Parks, Secretary, Hobart Commercial Club.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

A. K. Grant, Mayor, Mount Vernon. (Population 5,563.)

(1) I find the sentiment among business men here about equally divided.

Secretary, P. M. Crume, Peru Commercial Club. Population 10,910.)

There has been no direct action taken by this organization. There has been some talk for and against the increase, but the general opinion appears to be to let matters take their course.

Secretary, South Bend Chamber of Commerce, D. Brickell, Acting Secy. (Population 53,684.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Percy L. Sisson, Mayor, Valparaiso. (Population 6,987.)

(1) The sentiment on this subject has not been generally expressed in our community and I am therefore unable to intelligently answer your question.

James M. House, Mayor, Vincennes. (Population 14,895.)

(1) I am satisfied that the business men of this city, like myself, do not have the necessary information to enable them to make an intelligent answer to this question.

INDIANA EDITORIAL COMMENT.

Ft. Wayne (Ind.) Sentinel, November 29, 1913.

Particularly for a great railroad center like Fort Wayne, the present plea of the railroads for the right to increase freight rates in practically all classes has very great interest. The railroads have participated so largely in the building and development of this city that there will here be found not only a public sentiment disposed to be absolutely fair in the proposition, but even still more kindly disposed toward the railroads if they are able to present satisfactory evidence of the justice of their demands.

Gary (Ind.) Tribune, December 10, 1913.

The time has come when the Interstate Commerce Commission, voicing the interests of the nation, must recognize the great fact that our railroad corporations, with all the disagreeable facts of the past are as they are, and cannot be changed now. With growing demands by their employes and the loud calls of the public for better service and a smaller toll of dead and injured, on the basis of their present incomes they are up against it, and when they are in such dire straits, the people they serve are also up against an intolerable proposition.

If the people insist upon the present railroad rates, they must take what they get in service and safety. There is nothing else to be done.

Gary (Ind.) Tribune, January 2, 1914.

Every indication of coming events indicates that the Interstate Commerce Commission is going to grant the railroads an advance in rates. The manufacturers, who were so strong against the advance the last time it was up, are now silent. The big newspapers are solidly in favor of the advance. The trend is all that was, and it seems only a question of a short time before the Commission will act.

The change in sentiment during the past three years has been remarkable. During that period, the public has been demanding more of the transportation companies year by year. Better service, steel coaches, safety appliances, block signals, higher wages and heavier taxes have all added to the expense of operation without a corresponding increase in earnings.

The railroads have gone to the limit, it seems, in these directions without being given a larger income.

Indianapolis (Ind.) News, May, 1913.

Rate restrictions imposed by the Interstate Commerce Commission and capital restrictions which will be the result of the physical valuation soon to be undertaken do not allow the railroads wide latitude. They can not increase their expenditures beyond reason without being expected to seek recompense in higher revenue.

Indianapolis (Ind.) Star, December 23, 1913.

The position taken by the railroads that they ought to be permitted to figure the costs of protection into their service charged is fundamentally sound. No business can survive on a profitable basis unless it adjusts its charges to the costs of production. The only consideration that might change a universal rule in its application to railroads would be a possibility of abnormal profits on actual investment, or the carrying of fictitious capitalization.

NEW JERSEY.

REPLIES OF A FAVORABLE CHARACTER.

Mayor John J. Todd of Morristown. (Population 12,507.)

(1) Yes.

(2) Yes.

Secretary, R. E. Lent, Passaic Board of Trade. (Population 54,773.)

The Passaic Board of Trade recently held a referendum on the question of the five per cent increase in freight rates and the vote cast was 215 in favor of the increase and only 9 against it. The following letter was sent to the various members of the Board of Trade, calling their attention to the referendum which was decided in the manner above indicated:

To Members of the Board of Trade:—

Dear Sirs:

In order to determine the sentiment of the business men of Passaic on important matters affecting their interests, the Directors of the Board of Trade have decided to inaugurate a system of referendum among the Board members.

The first subject to be put to referendum, as decided at a meeting on December 18th, is the matter of increased freight rates. This subject is one of very vital importance to every business man in the country. The prosperity of almost every business is related either directly or indirectly to the railroads. If the railroads are prosperous, business throughout the country is apt to be good; if the railroads are not prosperous, business throughout the country is apt to be poor. It is the claim of the railroads that an increase in rates is absolutely necessary to their continued prosperity.

When the Interstate Commerce Commission hands down its decision, it will unquestionably be guided, to a very large extent, by public opinion. It is therefore, imperative that we, of Passaic, should go on record, either as opposing or recommending the increase.

The Board of Trade's Committee on Manufacturing has carefully considered the arguments pro and con, and is of the belief that the increase should be granted. A statement in brief of the principal arguments considered is enclosed herewith. A postal, which will serve as a ballot, is also enclosed. Please indicate whether you wish your vote recorded "in favor" of the recommendation of the committee, (i. e., in favor of the increase in rates) or "opposed to" the recommendation of the committee. Mail the postal, as soon as possible. to R. E. Lent, Secretary of the Board of Trade. No vote will be counted unless received within seven days from date.

Very truly yours,
F. WILCKES,
Chairman of Committee on Manufacturing.

Mayor Robt. G. Wymer, Jr., of Salem. (Population 5,533.)

(1) Yes. The sentiment hereabouts is best expressed by the following editorial taken from the *Salem Sunbeam*:

About the only thing that seems to be needed, according to those who have made the subject a special study, to make business hum all over our land is to have the Interstate Commerce Commission give the railroads authority to raise their freight and passenger rates. Rates that were liberal a few years ago are not so now, the higher cost of all materials entering into railroad construction and operation and the higher wages now paid to all employes of the roads having so depleted the revenues of all railroad corporations that extensions needed to get the business of new territory and increased and bettered equipment to handle present traffic are altogether out of the question, while some roads have been compelled either to pass temporarily their dividends or to make reductions that are embarrassing to their stockholders. A little easier money in the treasuries of the railroads would make more business and easier money everywhere.

Secretary, State Chamber of Commerce.

The following extract is from a letter forwarded from the New Jersey State Chamber of Commerce to the Interstate Commerce Commission on July 18, 1913:

On June 11, 1913, the transportation committee of the New Jersey Chamber of Commerce submitted to a referendum vote its proposal to support a movement which might tend to increase the earnings of the railroad systems of the country. As a result 98 per cent of our members approved the proposal.

It is the belief of the New Jersey State Chamber of Commerce that there are many apparent reasons favoring the contention of the railroads of this country that they should be allowed a larger margin of earnings in order to insure proper service and maintenance and that this would result in a general business expansion. The Chamber further believes that the restoration of financial credit and the opportunity thus afforded to grow and expand would work a benefit to every industrial city in the United States.

Mayor Henry W. Evans of Westfield. (Population 6,420.)

(1) I believe that our people would be favorable to the increase.

REPLIES OF AN UNFAVORABLE CHARACTER.

Henry J. Grig, Mayor, Millville. (Population 12,451.)

The sentiment is that freight rates are high enough.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, W. B. Dill, Atlantic City Chamber of Commerce. (Population 46,150.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

President, J. W. Moore, Bayonne Civic Association. (Population 55,545.)

No definite action has been taken by this Association on the subject of increased rates. For your information, I am at liberty to state that under normal business conditions, our Association would not only have advocated the proposed increase, but would also have given every possible assistance to the movement.

Secretary, Hoboken Business Men's Association. (Population 70,324.)

No action has been taken by this Association for or against the five per cent increase in freight rates in Official Classification territory.

Secretary, Daniel Doran, Long Branch Chamber of Commerce. (Population 13,298.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, James M. Reilly, Newark Board of Trade. (Population 347,469.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, John J. Fitzgerald, Paterson Board of Trade. (Population 125,600.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Hugh Lynch, Perth Amboy Board of Trade. (Population 32,121.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, M. S. Sherwood, Summit Board of Trade. (Population 7,500.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, C. Arthur Metzger, Trenton Chamber of Commerce. (Population 96,815.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

NEW JERSEY EDITORIAL COMMENT.

Elizabeth (N. J.) Journal, November 26, 1913.

Judging from the comment of newspaper and current magazine editors, the public generally is not unfavorable to the proposed increase. It is realized that the railroads are securing a margin of profit in recent months far too small to allow them to make such improvements as are necessary to facilitate the convenience and insure the safety of their patrons.

While wages, operating expenses and taxes have increased to a marked degree, as shown by the reports of experts testifying for the railroads, the net operating income of the roads interested has been far less than previously.

While the public generally expects to pay out of its pocket this added increase of rates, it does not complain if it knows that the increase is justified and the income from it is to be used in increasing the service of the roads, promoting improvements that shall enable them to better care for the interests of the communities they serve and to safeguard the welfare of their patrons.

The public has a better understanding with railroads than ever before and is willing to allow adequate rates for service, but not increased rates to fatten dividends.

Paterson (N. J.) Press, January 8, 1914.

An impression that the Government has been handing out rather too hard lines to the railroads in the regulation of freight rates without regard to the increased expenses they have been called upon to bear, and their ability to make the extensions and betterments of service that are needed, is indicated by the recent action of important commercial and manufacturing associations, particularly in the West. The Manufacturers' Association of Illinois, which was for a while one of the most energetic in opposing the movement of the railroads for increased rates, has just come out with a strong appeal that the advance be granted in order "that present service for the shipper may be maintained and improved." Another evidence of the change in sentiment is seen in the action of members of the Chicago Board of Trade—mainly composed of shippers—in circulating a petition to the Interstate Commerce Commission to grant the advance asked for. These facts suggest that many business interests that were formerly antagonistic have discovered that they cannot be prosperous unless the railways are permitted to prosper.

Perth Amboy (N. J.) Evening News, May, 1913.

It is not surprising that the railroads have announced their intention of asking the Interstate Commerce Commission for the right to increase rates, and we believe the public will sanction granting the same.

WISCONSIN.

REPLIES OF A FAVORABLE CHARACTER.

Secretary, Frank E. Lane, Janesville Commercial Club. (Population 13,894.)

There is considerable difference of opinion between some of our members. However, personally, I feel that the tendency would favor an increase in Official Classification territory, as rates in this section are considerably lower than in the Western Classification territory.

Secretary, Conrad Shearer, Kenosha Manufacturers' Association. (Population 21,371.)

The following resolutions, passed on July 11, 1913, by the Manufacturers' Association of Kenosha, indicate the attitude of this body towards the proposed increase of five per cent in freight rates in Official Classification territory:

Whereas, It has been represented that an increase in freight rates is necessary in order that additional equipment be provided and facilities improved. That such increase will result in benefits to shippers throughout the country,

Therefore, Be It Resolved, That the Manufacturers' Association of Kenosha, through its duly authorized officials, does hereby approve of such action on the part of the Interstate Commerce Commission as will permit an increase of freight rates by the railroads through an equitable adjustment, fairly distributed with the end in view of providing adequate service to the shipping public.

Resolved, That a copy of these resolutions be forwarded to the proper authorities and one kept on file in the offices of the Association.

Manufacturers' Association of Kenosha,
(Signed) W. W. Vincent, President.
(Signed) Conrad Shearer, Secretary.
Kenosha, Wis., July 11, 1913.

R. W. Barrett, Secretary, Merrill Chamber of Commerce. (Population 8,689.)

Our organization has passed no resolutions with reference to this matter. In speaking with a number of our directors, however, I can safely say at this time that they are in favor of a legitimate increase in freight rates. As a general rule when the railroads are prosperous, the country's condition is prosperous.

William G. Bruce, Secretary, Merchant's and Manufacturers' Association of Milwaukee. (Population 373,857.)

We have placed ourselves on record on the question of the proposed advance in freight rates, as follows:

> The capital invested in railroads is entitled to a reasonable return. The public is entitled to an efficient service by the hands of the railroads. The Interstate Commerce Commission should investigate the question of an advance in railroad freight rates and if such an advance is warranted by the facts and conditions, the advance should be made.

Milwaukee (Wis.) Wisconsin, December 10, 1913.

No wonder that the railroads are facing the calamity of inability to "make both ends meet." No wonder that fair minded men who have studied the situation are in favor of the granting by the Interstate Commerce Commission of the application of the Eastern roads for permission to raise their freight rates five per cent.

Secretary, W. A. Lesson, Ripon Commercial Club. (Population 3,739.)

This Club has passed no resolution to increase freight rates or has the matter been discussed, but in conversation with our leading men I find they are of the opinion that the railroads should receive a rate which would cover their expenses and give them a fair profit on money invested. On the face of the matter such a condition does not seem to exist.

J. A. Little, Chief Statistician, Superior. (Population 40,384.)

Answering your inquiries in the order in which they were made, I will say that the sentiment of the business people of the city and the press of the city seems to be quite unanimous in the position that the railways of this country are entitled to earn an amount sufficient to take care of operating expenses, taxes, fixed charges, fair dividends on the value of the property, and in addition, a reasonable surplus from which improvements of a minor character or non-revenue producing improvements can be made, providing, however, that such improvements made from surplus revenue, shall not be capitalized in the future and be made the basis for an increase in the rate of freight or fares for passengers.

Of course no business man or organization of business men would favor an increase in rates, if it can be shown that there is any great inefficiency or wasteful operation of the roads or that the necessity for such increase arises from mismanagement of the property or its financing. It certainly must be incumbent upon the carriers to clearly show that the additional moneys are needed to meet the fair requirements of the property, which has been efficiently and economically managed.

I may say that while this statement is a very fair one as to the question of advances in all rail rates, that there is a decided sentiment against any advances in the lake and rail rates from Eastern territory to the head of Lake Superior and this port.

The history of the all-rail rate structure will show that the general level of all-rail rates has been maintained at about the same figure with a great many reductions during a period of say twenty years, while the charges for lake and rail shipments have been advanced several times, narrowing the difference between the lake and rail and all-rail rates. Because of such prior advances in the lake and rail rates as compared with the all-rail adjustment, it is believed that there should be no advance in lake and rail rates at this time.

As to the second inquiry, the writer can see no objection to a speedy determination of this question on its merits, and a prompt granting of the request for advanced rates if the Commission shall find the carriers are entitled to such increase in rates.

As I understand the terms of the Mann-Elkins law, governing the Commission in this investigation of advanced rates, the Commission may allow an increase in general schedules of rates, without such action precluding the Commission from further considering the question of individual rates, either from the standpoint of reasonableness where such rates are affected by special conditions, or where the increase may have resulted in unjust discriminations prohibited by other sections of the law. This would, at least in theory, allow a shipper who was injured in some special instance, to bring a complaint before the Interstate Commerce Commission to test the reasonableness or establish the discriminatory character of the advanced rate.

As to the question of national regulation of railway securities it is my opinion that it is not necessary that such regulation should precede the determination of the advanced rate case or the granting of such advances on proper showing. The Interstate Commerce Commission and the courts have never taken the amount of outstanding securities as the basis upon which the railways are entitled to earn a fair return. It would seem to the writer as if this question of regulation of securities issue, is a proper subject for separate consideration from the question of advanced rates.

Traffic Manager, A. E. Solie, Wausaw Advancement Association. (Population 16,560.)

This organization has not as yet passed any resolutions with regard to the proposed five per cent increase in freight ratės now pending before the Interstate Commerce Commission, although the matter has been given more or less consideration. However, the writer is in a position to say at this time that we have no objection to the five per cent increase in freight rates on the condition that we can get a readjustment of freight rates on all classes of commodities from this territory.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

J. B. Fleming, Mayor, Eau Claire. (Population 18,310.)

(1) No; nothing has taken place here which could lead me to such a conclusion.

R. F. Kaiser, Pres., Eau Claire Business Men's Association.

No action has been taken by this organization for or against the proposed increase in freight rates in Official Classification territory.

Secretary, A. M. Richmond, Evansville Commercial Club.

No action for or against the rate increase has been taken by this organization.

Secretary, Fond du Lac Business Men's Association. (Population 18,797.)

No action for or against the rate increase has been taken by this organization.

G. A. Bading, Mayor, Milwaukee. (Population 373,857.)

(1) Your request has been referred to the Secretary of the Merchants' and Manufacturers' Association.

Secretary, H. A. Rhunb, Milwaukee Chamber of Commerce.

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, E. B. Heimstreet, Palmyra Business Club.

No action has been taken by our Business Club on this subject. In fact, we have been waiting for opinions from the larger clubs before taking any action ourselves.

Secretary, Walter R. Frann, Waukesha Business Men's Club. (Population 8,740.)

No action has been taken by our Association, but I know many are in favor of the carriers being allowed an increase in rates.

MARYLAND.

REPLIES OF A FAVORABLE CHARACTER.

Secretary, James B. Hessong, Baltimore Chamber of Commerce. (Population 558,485.)

The following report of the Traffic Committee of the Baltimore Chamber of Commerce to whom referred the petition of the railroads for an increase of five per cent in their freight rates was unanimously adopted by the Board of Directors of this organization at a special meeting held May 17, 1913:

> It is believed, from the statements of the representatives of the railroads, that the advance is absolutely necessary, and that the increased revenue derived therefrom will be equitably applied to the enlargement and development of terminals, additional equipment, also improved and increased facilities, and that the advance will not result in undue discrimination against localities or commodities. Therefore, the Traffic Committee approves the proposed advance in rail freight rates, and respectfully recommends that you endorse the carriers' application to the Interstate Commerce Commission for the increase in rates, as set forth by the railroads.

Secretary, Jno. W. Marshall, Old Town Merchants' and Manufacturers' Association, Baltimore.

At the regular January meeting of the Old Town Merchants' and Manufacturers' Association, the following resolutions were unanimously adopted:

> Resolved, That the Old Town Merchants' and Manufacturers' Association of Baltimore puts itself on record as favoring the request of the railroads to the Interstate Commerce Commission, for permission to increase freight rates five per cent.
>
> Resolved, That we believe that the increase is justifiable as it will enable the railroads to give improved service and better facilities to their shippers and will prevent that depression of their bonds and stocks that causes such unrest in the financial world.
>
> Resolved, That a copy of these resolutions be sent to the Interstate Commerce Commission of the United States.
>
> Very truly yours,
>
> Jacob W. Cook, President.
>
> John W. Marshall, Secretary.

Mayor George G. Young, of Cumberland. (Population 21,839)

(1) Yes.

(2) Yes.

Secretary, Lloyd T. MacGill, Frederick Board of Trade. (Population 10,411.)

On December 12, 1913, our Board of Trade unanimously passed a resolution endorsing the proposed advance of five per cent in freight rates. I think you will find that our organization was the first in the United States to take action favorable to the railroads.

MARYLAND EDITORIAL COMMENT.

Cumberland (Md.) Times, December 19, 1913.

The railroads of the country are making an appeal to the Interstate Commerce Commission for the privilege of increasing their rates. This request should be granted. The "Baltimore Sun" in an editorial explains why the railroads should be allowed to change their rates.

For these reasons we favor the granting of increased rates to the railroads. And we would like to see them granted at the earliest possible moment.

Baltimore (Md.) Evening Star, November 24, 1913.

There seems to be no room for doubt concerning one phase of the general railroad situation as compared with the general situation of, say, five years ago. There can be no disputing the fact that the operating expenses of all railroads have increased greatly during the past five years because of the general increase in the monthly pay of all grades of employes.

Baltimore (Md.) Evening Star.

The one compelling reason why the increase should be allowed is that nearly every road in the East faces an actual and growing loss due to the immensely increased costs of operation, brought about principally by the substantial additions to the payrolls resulting from the widespread increases in pay obtained by the employes on the lines generally during the last two years. At the same time other costs—those for rails, equipment, upkeep and the like—have likewise increased, although not proportionately.

If the roads are compelled to support an annual deficiency on the income side trade cannot be effectively done. The need of relief is an immediate one, not one relating to future betterments.

Baltimore (Md.) Manufacturers' Record, June 19, 1913.

"The railroads of the country, by force of public sentiment and of economic conditions, have been compelled year after year to increase the rate of wages of their employes; nearly everything they have had to buy, from oils to locomotives, has been advanced in price; indeed, the 'high cost of living' is just as vital to every railroad in the country as it is to every individual. It is costing more to operate railroads, more to equip them, more to provide the facilities which the public demands. They are practically being regulated out of existence without the privilege of increasing their income to a sufficient extent to save themselves. Unless a complete change comes about in the very near future and railroads are given the privilege of making larger earnings by higher rates, this country will be compelled to see a complete breakdown of the whole railroad system of the land, or else to take over all of our railroads, with the enormous indebtedness which that would bring about, and the utter collapse of our system of government which would follow. The stone wall faces us. We cannot butt it down; we cannot crawl underneath nor climb over it. We must find a way to remove it. That stone wall is the misunderstanding of the railroad situation which has existed throughout our country for some years. Too many people have been made, by honest but misguided men and by dishonest demagogues, to believe that they and the country would get rich by destroying the railroads, or by reducing freight and passenger rates to the lowest possible limit. This hostility is largely due to the conditions which prevailed in the railroad world fifteen or twenty years ago, when the building of speculative railroads for the purpose of carrying securities, rather than for the carrying of traffic, was the order of the day. Long ago we passed out of that period, and for many years most of the railroad managers of this country have been earnestly striving to operate railroads with just as much honesty as private business interests are managed. They sought to find a way to give to the public the improvements demanded for freight and passenger business. They have seen and realized more than any one else the difficulties which confronted them. They have seen the lessening of their ability to increase their facilities in keeping with the growth of the country. The public, however, has not yet come to a full realization of the danger of the situation that exists to-day. It does not yet fully understand how a breakdown of the railway system of the country would demoralize every industry and interest in the land.

"We are hastening to the time when every interest in the country will be endangered and losses produced which will run into billions unless we can find a way to put our railroad interests on a sounder and safer basis, where their income can be increased and when the $8,000,000,000 or $10,000,000,000 that ought to be spent upon railroad expansion in the next ten years can be provided. This is not a theory. We are face to face with facts of tremendous significance. We can only save ourselves and our business interests by finding a way to vastly increase railroad earnings and to put railroad securities on some safe and sound basis that billions of dollars may be poured into investments in the building of new roads and the expansion of existing lines. Unless we do that we shall see, as surely as we see the sun rise, a breakdown of business because of a breakdown of the machinery of doing business, viz., transportation."

Baltimore (Md.) Manufacturers' Record, December 28, 1913.

It should be borne in mind that every wheel that turns is being worn out, that every rail over which an engine or a car runs is being weakened and worn, that every roadbed not kept up to the highest mark is deteriorating, and that it will be impossible to avoid these conditions without a large increase in the net income of railroads. Present conditions endanger the lives of men who travel, and practically everybody is a traveler. Present conditions make it impossible for the railroads to handle all freight economically and expeditiously even now when business is inactive.

Were business as active as in times past, practically every railroad in the country would be broken down and unable to handle its traffic. If it were possible to inject into the treasury of the railroads of this country the billions of money needed for the enlargement of their facilities, we would very soon have such activity in railroad work and railroad expansion as would bring about a revival of business throughout the country and an enlarged demand for labor, and this, too, without regard to tariff or other adverse conditions. A great stimulation to railroad building would promptly stimulate every other industry in the country, and the men who would pay the slightly increased freight rate would by this greater activity of business many times win a larger profit than the added cost of freight. Every man, who, if the matter were up for public vote, voted for an increase in railroad rates would be voting much more largely in the interest of his own prosperity than in the interest and the prosperity of the railroads.

Baltimore (Md.) News, May, 1913.

The aggregate lien representing the demands of all three classes of employes would approximate $1,000,000,000. And the service remaining the same, the public interest in the issue would not be very different from what it would be were the railroads proposing to water their capital by declaring a stock dividend of exactly the same amount of four per cent first lien securities. In such a case the public would very naturally assume that it itself would have to pay the shot. How could it expect to escape doing so if the interest on that same amount of capital were merely distributed to employes instead of to stockholders?

Baltimore (Md.) News, May, 1913.

"Prosperity for the railroads, from the nature of the case, cannot mean mere profit-taking. It means an ever-increasing necessity to expand their equipment and organization to take care of increased business if they are to keep up with the procession. Indeed, if they are managed in the most enlightened way, larger receipts impose the necessity for larger expenditures to anticipate the future. For them, living from hand to mouth is little better than suicide.

"But, in another aspect of the problem, the shippers are only part of the body-politic which has undertaken to impose burdens on the railroads through awards of higher wages by means of public arbitration, and through requirements of better equipment and service imposed by the Interstate Commerce Commission. There is now, for the first time, an implied obligation to permit the rates to conform with larger expenditures."

Baltimore (Md.) Sun, May, 1913.

By reason of their general good behavior in the last few years, the roads have created a public sentiment that will insure them a fair hearing and an unbiased consideration of their plea. No one nowadays is disposed to deny their right to a fair share in the prosperity of the country.

Baltimore (Md.) Sun, November, 1913.

"We have included the Interstate Commerce Commission in the list of those from whom prompt and frank action is demanded, because we strongly believe that the most important step of all toward immediate business prosperity is the granting of the request of the railroads for increased freight rates. We have many times stated our reasons for this belief, but at this time will only mention one fact, one brought out at the recent hearing before the Interstate Commerce Commission. Since 1910 the Pennsylvania Railroad has increased its property investment by $207,000,000. The net income, however, instead of keeping pace with the enlarged investment was actually $11,000,000 less in 1913 than in 1910. Nor was the Pennsylvania Railroad an exception. During the three years in question all the roads included in the number which now ask an increase of rates added $659,000,000 to their property investment, but the net income of all of them was $16,000,000 less in 1913 than in 1910. Explain this as you will, no one is going to invest in railroad properties so long as this situation continues. Yet until the railroads do get the money to enable them properly to take care of the business that is offered them there can be no revival of business. This is fundamental."

Baltimore (Md.) Sun, December 18, 1913.

Perhaps others of "The Sun's" readers than the "Ultimate Consumer" whose letter appears elsewhere on this page to-day, are bothered to know why a paper like "The Sun," "which has been an undoubted champion of the people's rights, has so vigorously joined in the hue and cry for an increase of freight rates." We are glad to tell them why.

It is because we are championing the people's rights in doing so.

We are not concerned about the railroads. Their prosperity or adversity is of small moment except in so far as it affects the prosperity of the whole people. The old illustration of the row of upstanding bricks is perhaps the best and truest one that can be applied to the present business situation. If you push down the railroad brick it falls against the steel brick; the steel brick hits and knocks over the coal brick; the momentum of these three upsets the retail trade brick, which over turns the wholesale trade brick, and all of them throw down the professional brick. Thus the falling of one causes the falling of all.

Baltimore (Md.) Sun, December 24, 1913.

It is a little difficult to understand why it should be necessary for the Commission's members now to drag out their hearings over several months of time, as it has been said in some quarters that they will do. Do they not know now about as much as they will know on the first of May? Will anything that can happen between now and that time change their minds? In view of the apparent urgency of the situation, would they not do well to make their decision with the utmost promptness?

WEST VIRGINIA.

REPLIES OF A FAVORABLE CHARACTER.

Mayor F. M. Peters of Bluefield. (Population 11,188.)

(1) Yes; we feel that owing to the increases in wages granted employes by the railroads and other increases in expenses, including advanced cost of operation and and maintenance, it is only fair that the small increase in freight rates requested should be allowed.

(2) Yes; we feel that the matter ought to be settled now, and believe it will stimulate business when allowed.

Mayor of Fairmont. (Population 9,711.)

(1) I think our community favors the increase.

(2) Yes.

Mayor Cornelius Watkins of Grafton. (Population 7,563.)

(1) The city depends upon the railroads

very largely for the employment of its skilled and unskilled labor, and local business men having suffered by reason of cuts made in the number of local railroad employes, there is a considerable feeling favoring the proposed increase.

(2) Yes.

J. G. Allender, Secretary, Grafton Merchants' Association. (Population 7,563.)

With reference to the attitude of the Merchants' Association concerning the proposed increase in freight rates, I desire to call your attention to the following resolution which was passed by this organization on January 27th:

"*Resolved,* That this Association is in favor of the proposed increase in freight rates as embodied in the petition of the railroad companies now pending before the Interstate Commerce Commission."

Mayor Floyd S. Chapman of Huntington. (Population 31,161.)

(1) Our Chamber of Commerce has already adopted resolutions favoring the increase.

(2) Yes.

Secretary, H. E. Mathews, Huntington Chamber of Commerce.

As the appended resolution indicates, the business men of Huntington are in favor of permitting the carriers in Official Classification territory to increase their freight rates five per cent. In commenting on the effect of this resolution, the Secretary of the Chamber of Commerce states: "It gives me pleasure to add that we have received many congratulations on our action in passing this resolution by those who were not able to be present at the meeting, and it is the consensus of opinion of our people in general, that the railroads' petition to increase their rates in Official Classification territory be granted. Being secretary both of the Chamber of Commerce and of the Jobbers' and Manufacturers' Bureau, I enclose resolutions passed by both organizations. I might add that these were passed at regular meetings and not at ones called for the special purpose of taking action in this matter, and each meeting was attended by more than the usual number of members, thus giving considerable favorable weight to the question."

Resolution Passed at a Regular Meeting of the Jobbers' and Manufacturers' Bureau Held December 19, 1913.

Believing that the five per cent advance in freight rates asked for by the railroads, in Official Classification Territory, is both reasonable and just and is fully warranted in order that they shall be able to maintain the high degree of efficiency expected of them, we hereby express our full approval of their application for said advance.

Resolution Passed at a Regular Meeting of the Huntingdon Chamber of Commerce Held December 11, 1913.

Whereas, Railroads must maintain a high state of efficiency for the safety of both passenger and freight, by adding new appliances and improved equipments; and

Whereas, There is a general advance in the price of all commodities, and an increase in the cost of raw material; and

Whereas, The advanced wage scale demanded and granted to various employes; therefore, be it

Resolved, By the Huntington Chamber of Commerce that the petition of the carriers in Official Classification Territory to advance freight rates five per cent, be granted, and that a copy of this resolution be given the public press, as well as sent to the Secretary of the Interstate Commerce Commission at Washington.

Jobbers' and Manufacturers' Bureau, Huntington.

The following is an official statement made by the Jobbers and Manufacturers Bureau on December 19, 1913, regarding the attitude of their members as to the proposed increase of five per cent in freight rates in Official Classification territory:

Believing that the five per cent advance in freight rates asked for by the railroads, in Official Classification Territory, is both reasonable and just and is fully warranted in order that they shall be able to maintain the high degree of efficiency expected of them, we hereby express our full approval of their application for said advance.

Max Robinson, Acting Secretary, Martinsburg Board of Trade. (Population 10,698.)

The following resolution adopted by the Executive Committee of the Martinsburg Board of Trade reflects the sentiment of the entire membership of this organization. In addition to this "Post A" of the West Virginia Division of the Travelers' Protective Association of America, located at Martinsburg, has adopted similar resolutions, both of which have been forwarded to the Interstate Commerce Commission:

"WHEREAS, Existing conditions demand readjustment of values in all lines of commerce and transportation; Therefore, be it

"*Resolved,* As the sense of this meeting that the railroads are justly entitled to their proportion by some equitable increase in freight rates to enable them to provide adequate facilities and to further safeguard the lives of those they transport and employ."

Max Robinson, President, Travelers' Protective Association of Martinsburg. (Population 10,698.)

The following is a copy of resolutions

adopted by Post A of the West Virginia Division of the Travelers' Protective Association of America at their meeting held January 23, 1914:

Whereas, Present conditions demand increased facilities and better safe-guarding of life on the part of the railroads, and

Whereas, Railroad revenues have been reduced in various ways in recent years and to enable them to provide such additional facilities and equipment, be it

Resolved, By Post A, West Virginia Division of the Travelers' Protective Association of America that the Interstate Commerce Commission be requested to favorably consider a reasonable increase in freight rates for the purpose; be it further

Resolved, That a copy of these resolutions be mailed to that governing body and to the proper officials of those railroads adjacent to this territory.

A true extract from the minutes January 23, 1914.
Post A,
West Virginia Division,
Travelers' Protective Association,
Martinsburg, W. Va.
Max Robinson, D. F. Dennis,
President. Secretary.

Mayor Terence D. Stewart of Morgantown. (Population 9,150.)

(1) I have heard but little discussion by business men with regard to the proposed rate increase, but what I have, has been rather in favor of such increase than against it.

(2) In so far as I have heard the matter discussed, the persons in favor of the increase think it should be granted now.

Secretary, Alex. Purdy, Moundsville Board of Trade. (Population 8,918.)

While our organization has passed no resolutions endorsing the proposed advance in freight rates, my opinion, based on expressions heard from business men and citizens in general, is that there is no objection to an increase in freight rates if they do not exceed five per cent.

Secretary, William Schwertfeger, Business Men's Association of Wheeling. (Population 41,641.)

The following resolution regarding the proposed increase of freight rates in Official Classification territory has been passed by our Business Men's Association:

Whereas, The increasing commerce of our country is constantly demanding more railroad equipment and larger terminals for its rapid movement, and

Whereas, In the present unsatisfactory totals of railroad net earnings they are unable to borrow money for urgent improvements at a moderate rate of interest; and

Whereas, Wages and other expenses of operating are continuously mounting higher; and

Whereas, It is the desire of the business men of this community that American labor receive a maximum wage and that present standards be not lowered now

Therefore, We, the Business Men's Association of Wheeling, West Virginia, most respectfully request the Interstate Commerce Commission to grant the application of the eastern railroads for a five per cent increase in freight rates.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Mayor of Elkins. (Population 5,260.)

(1) I find by making inquiry that our business men are divided on this proposition, but all hope that an amicable adjustment may be reached.

WEST VIRGINIA EDITORIAL COMMENT.

Wheeling (W. Va.) Intelligencer, May, 1913.

The public cannot assume to control and regulate railroad rates without at the same time assuming so to control and regulate them that railroad operations will be profitable to the men engaged in them. We must have railroads. We have a right to expect them to be operated honestly and economically, but we cannot compel them to be operated at a loss to their owners, nor can we so limit them that they will not be able to provide the equipment, keep up the repairs, and to make the improvements necessary to serve the public to the best advantage.

CONNECTICUT.

REPLIES OF A FAVORABLE CHARACTER.

Secretary, F. A. Bennett, Bridgeport Manufacturers' Association. (Population 102,054.)

Our organization has taken no formal action on this matter, but it is understood that in view of the widespread opinions that it is really necessary for the carriers to secure an increased revenue and we are taking no steps to oppose such an increase, leaving the matter in the hands of the Interstate Commerce Commission, believing that if the carriers can show conclusively that it is necessary for them to advance their rates, that their request should be granted.

Secretary, F. S. Valentine, Derby Business Men's Club. (Population 8,991.)

The following resolution, indicative of the attitude of the Derby Business Men's Association, was passed at a meeting held November 3, 1913:

Resolved, That, it is the sense of this Association that in view of the largely increased cost to the New York, New Haven and Hartford Railroad in transporting both merchandise and passengers, the privilege should not be denied them of so advancing their rates as to make receipts equal expenditures, leaving a reasonable margin of profit to the investors in its stock.

Mayor H. B. Marshall of Greenwich. (Population 16,463.)

(1) I do not see how the railroads can get along without the five per cent increase in freight rates as asked for, for the reason that the cost of operation has greatly increased of late years to say nothing of paying interest on such a large quantity of water that many of them are trying to absorb.

Secretary, N. B. McKinney, Greenwich Board of Trade.

While our Board has as yet, taken no action for or against the increase in freight rates, it is my personal opinion that the members would not be opposed to such increases.

Mayor of Hamden. (Population 5,850.)

(1) Yes; if a reasonable amount of the increase is apportioned to improvements and betterments of the service.

(2) Yes; all at once and promptly, if it is necessary to do so in order to keep the service up to the present standard or better it. In view of the high cost of labor and materials, we cannot see or recommend any better way than to allow the railroads to raise their rates to a reasonable extent.

Secretary, John P. Lenning, Middletown Business Men's Association. (Population 20,749.)

The Business Men's Association of Middletown has not taken any special action on the carriers' petition for permission to increase their freight rates. The matter came up at the Board meeting of the State Business Men's Association which I attended as a director from Middletown. The Board endorsed the petition by an unanimous vote. I am confident my vote on that measure accurately reflected the opinion of our business men; at least, no petition has been started for the recall of my vote.

Mayor Geo. E. Barlow, of Shelton. (Population 6,545.)

(1) Yes.

(2) Yes.

From R. C. Blakeson, the Warden, Torrington. (Population 16,840.)

(1) I find after a careful investigation that at a meeting of the Business Men's Association of Torrington with only twenty members present, a vote was passed authorizing their secretary to write to the Interstate Commerce Commission now to allow any advance in freight or passenger rates. After making personal inquiries, and what I have been able to take from our daily papers, I do not think this feeling is representative of the people of this vicinity. I am satisfied that they would approve of a slight advance in rates in order that the railroad companies might use same, first, for the safety of the traveling public and also for increased facilities.

(2) If an increase is granted, this should be done as promptly as possible, so that we would begin at the earliest possible moment to get the advantage of the increased business which it would mean as soon as the railroad companies begin to spend the money necessary to keep their equipment up to the high standard.

REPLIES OF AN UNFAVORABLE CHARACTER.

Mayor of Berlin. (Population 3,728.)

(1) As near as I can find out, the sentiment of the business men of this community is not in favor of any increase.

First Selectman, F. Howard Ensign, East Hartford. (Population 8,138.)

(1) I am sure that the business men of this town do not favor an increase in rates.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Wm. I. Barber, Hartford Board of Trade. (Population 98,915.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Business Men's Association, Hartford.

This Association has had the matter under consideration for some little time, but to date has not taken any definite action for the reason we wish to investigate and ascertain the alleged necessity for a general five per cent increase in freight rates, also the effect such increase would have upon New England industries. While we are not opposed to the principles of a raise in freight rates, we believe that the matter should be carefully considered before any definite action is taken by the Interstate Commerce Commission. One of our committees is to report on this question at a later date.

Secretary, Chas. E. Julin, New Haven Chamber of Commerce. (Population 133,605.)

No action has been taken by this organization for or against the proposed five per cent increase in freight rates in Official Classification territory.

Secretary, F. H. McKenzie, Southington Board of Trade. (Population 6,516.)

No action has been taken by this organization for or against the rate increases.

Secretary, W. C. Kemp, Winsted Business Men's Association. (Population 8,679.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

CONNECTICUT EDITORIAL COMMENT.

Ansonia (Conn.) Evening Sentinel, May, 1913.

It is a foregone conclusion that the railroads cannot forever increase their expenses without increasing their incomes. This rule works out the same with corporations as it does with individuals.

Ansonia (Conn.) Sentinel, November 29, 1913.

Just now there seems to be a general tendency to concede that the demands of the railroads are just and the only hesitancy seems to be over what use will be made by the roads of the additional profits thus acquired.

Bridgeport (Conn.) Standard, November 25, 1913.

While no one relishes the idea of having to pay more for transportation, there is by no means the same opposition to the proposed freight increases in Eastern territory that there was three years ago. The figures presented by President Willard, of the Baltimore & Ohio at the preliminary hearing before the Interstate Commerce Commission yesterday, show that the enforced increases in operating costs combined with an equally compulsory limitation on income make it unprofitable to invest new capital in the additions and improvements necessary to take care of a constantly increasing volume of traffic. As between the slight additional burden of a general five per cent increase in freight rates and the prospect of having to put up with inadequate service, the former is undoubtedly the lesser evil.

Bridgeport (Conn.) Standard, January 17, 1914.

Just how much stimulus an increase in freight rates would give to general business, there is no means of telling accurately, but undoubtedly its beneficial effects would be great.

Farington (Conn.) Register, December 6, 1913.

They need and must have relief, not because of any intrinsic defect, but because of the vastly increased cost of materials and increase of wages. Government-ownership is the only alternative and even the rabid advocates of this would hesitate to advocate it under existing conditions. The roads must be dealt with fairly, the public so requires.

New Britain (Conn.) Herald, November 25, 1913.

It must appear to every intelligent person that in order for every road to meet its obligations that it must have sufficient revenue. There has been a general increase in operating expenses of all financial enterprises, the wages of the employes have been increased, because, as has been explained in a recent report, that the increased cost of living demanded it, and this in itself proves conclusively that with increased expenses should come increased revenue or the railroad business cannot go on under the present method.

New Haven (Conn.) Journal Courier, November 27, 1913.

That there is a great increase in the expenses of the roads is undeniable. It is plainly accounted for by the various increases of wages the roads have been compelled to give their employes, by the increased taxation to which they are subjected, whether justly or unjustly, and by the enormous outlays they have been required to make in obedience to behests of the railroad commissions, state as well as national.

The leading newspapers of the country, almost without exception, concede the necessity of granting the increase the roads ask for, and do not mince matters in advocating the justice of the roads' petition.

New Haven (Ct.) Journal Courier, May, 1913.

The railroads have had hard sledding and their appeal to the Commission is, it must be generally conceded, just and reasonable. That the railroads have been punished enough for their sins of the past is also generally conceded. Any further punishment would, in the view of impartial observers, partake of the nature of persecution.

New Haven (Ct.) Journal Courier, October 18, 1913.

There seems to be no doubt in the minds of all fair minded men who are at all capable of judging the situation, that the petition of the railroads of the country now on record asking for a small increase of freight rates should be granted. The request is a reasonable one. The railroads are struggling under great difficulties in order to pay their way and make necessary improvements which the growth of the country imperatively calls for. Twice, and thrice in some cases in the last few years, the wages of their employes have been advanced. The increases were forced upon the roads both by the men and the unfriendly attitude or tacit consent of the Interstate Commerce Commission, for the employes could strike if their demands were refused while the railroads could not. In other words the railroads had to succumb. The controversy was wholly one-sided. The request of the railroads three years ago when they had granted these men an important increase of wages all along the lines, was denied by the Commission. Since then most of the men have demanded and received another increase of wages. The roads had no alternative and the government would not permit the railroads to strike.

The railroads have a much stronger case to present this time. Everything in the shape of costs and expenses has gone up. Wages are much higher, the cost of materials and equipments is much higher, steel cars are demanded and many other improvements, any of which are ordered by either federal or state commissions, the taxes of the roads have been increased in some cases enormously and finally the interest charge upon money required for improvements is heavily increased. Moreover, despite heavy increases in gross earnings the returns in net earnings is discouragingly small, in comparison. Furthermore, both federal and state authorities seem animated by a spirit of hostility to the roads and disposed to give them as hard sledding as possible.

Apparently also a bias of the Interstate Commerce Commission is disclosed in its hiring a bitter opponent and critic of the railroads to represent the shippers in the pending hearing. The shippers are an able, intelligent and competent body of men, thoroughly able to look out for their own interests and provide their own lawyer in the case. Speaking of this general subject and after referring to the very low rates of passenger fare on the New Haven road, the "New York Times" proceeds to say: "The railroads of the United States are working as hard as the New Haven and are being repaid by scourgings instead of recognition and reward. To use language which ought to be understood, the railways are being pillaged for the benefit of all other interests and by every authority even by those which ought to protect them."

New Haven (Conn.) Journal Courier, November 25, 1913.

That a senseless spirit of hostility to the railroads exists has been plainly manifested for years by State legislatures and not a few of the State Railroad Commissions. There are hopeful evidences, however, that the tide of feeling is turning at last in favor of giving the railroads the small advance of freight rates they ask for. It is becoming apparent to the traveling public that if the railroads are embarrassed and unprosperous, the country can but suffer also. That the railroads are carrying heavily increased burdens owing to "the high cost of living" and the frequent heavy increase of wages that they are obliged to submit to while powerless to raise their rates, is unmistakably evident.

New Haven (Conn.) Journal Courier, November 26, 1913.

Thus far the railroads have appeared to be friendless in the Commission. Its membership has been apparently more disposed to hear and regard the demands of the shippers, who, as a whole, have an axe to grind and some of whom would like to have the roads carry their shipments for nothing and insure them against all loss by accident or delays, in the bargain. The shippers are astute, keen witted and aggressive and well able to guard and protect their own rights and interests. Then there are the stockholders of the railroads. There are hundreds of thousands of them and they have rights also worthy of fair and discriminating consideration. It is somewhat to be wondered at that railroad stockholders, a great number of whom are people of small means, have never formed an organization to demand their rights.

New Haven (Conn.) Journal Courier, November 29, 1913.

The unanimity with which the leading newspapers of the country urge that the Eastern railroads should be permitted an increase of their freight rates, is good enough testimony as to the impressiveness and evident justice of the argument which the fifty-two roads which have petitioned the Interstate Commerce Commission for this increase have just made.

Norwich (Conn.) Record, June 4, 1913.

The railroads are willing to carry extra crews or extra engines or extra brakes or extra anything the legislature think ought to be carried, provided they are permitted to make their rates compensate for the aggravated outlay. That is fair enough. And what they ask is authority to raise their rates precisely five per cent, which is a conservative estimate of the increased return it is imperative they should get. If any plausible argument in opposition has been adduced it has not been generally promulgated. A financial panic among the railroads can only be avoided by granting them "a living wage." A railroad panic would mean a general paralysis of all industry in the nation.

Waterbury (Conn.) American, May, 1913.

It would seem as if the Interstate Commerce Commission must permit the railroads to raise rates. But what a howl will then go up from the shippers everywhere. Another handicap, it will be, speaking locally, for Waterbury, which has to bring all its raw materials, coal, etc., in as well as freight all its manufactured products out. Nevertheless, the concession of higher rates, which will in the end come out of the pockets of the ultimate consumer, is the only obvious solution.

MAINE.

REPLIES OF A FAVORABLE CHARACTER.

Secretary, Maurice C. Rich, Portland Board of Trade. (Population 58,571.)

This Board has not as yet taken any action regarding the increase in freight rates as recently indicated in the petition to the Interstate Commerce Commission. The sentiment of our people generally seems to be to meet the railroads half way in any movement tending towards increasing their income sufficient to defray their necessary expenditures. This, of course, is not an official statement, but is merely given as I have heard it by men in casual conversation.

Secretary, B. F. Colcord, Searsport Board of Trade.

The Board of Trade has not passed any resolutions relative to this matter, but I have talked with the President and a majority of the members and they all express the same sentiment: that there is nothing else to do if we want to keep the railroads out of the receiver's hands.

REPLIES OF AN UNFAVORABLE CHARACTER.

Secy., Frank A. Clark, Spring Valley Board of Trade.

Our organization is opposed to the increase in freight rates as noted in your letter.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Augusta Board of Trade. (Population 13,211.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Arthur K. Pennington, Bath Board of Trade. (Population 9,396.)

From the general discussion I have heard among business men, I should say that opinions were about evenly divided.

Secretary, Embert L. Jones, Gorham Board of Trade. (Population 2,822.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, Houlton Chamber of Commerce. (Population 5,845.)

No action for or against the increase has been taken by the Chamber of Commerce.

Secretary, W. H. K. Abbott, Waterville Chamber of Commerce. (Population 11,458.)

No action for or against the increase has been taken by the Chamber of Commerce.

MAINE EDITORIAL COMMENT.

Lewiston (Me.) Sun, May, 1913.

There is need of hundred of millions more of capital in railroad mileage and terminals and equipment. The grip of the Interstate Commerce Commission on the rate end, and the grip of the unions on the wage end are so suffocating that the march of growing industry is sure to be delayed.

Waterville (Me.) Sentinel, May, 1913.

We believe that the public will not object to such increased charges as are really necessary to provide for reasonable increases in wages.

RHODE ISLAND.

REPLIES OF A FAVORABLE CHARACTER.

President, Frank Baull, Bristol Town Council. (Population 8,565.)

(1) My belief is that the sentiment is universally in favor of the five per cent increase * * * * a favorable report on the freight rate increase will assist in my opinion * * * * this part of the country.

(2) I believe that the flat proposition of a general five per cent increase in freight rates is what public sentiment favors. Individual rate readjustments and National regulation of railway securities are two such intricate and complex questions that the general public is unable to discuss them intelligently. Such questions should be, and no doubt will be, scientifically disposed of by men of capacity and training. * * * * Let the Interstate Commerce Commission grant at once a five per cent freight increase and impose upon the railroad companies a note of confidence.

Pres., Alex. Leslie, Lincoln Town Council. (Population 9,825.)

(1) To the best of my knowledge and belief, there is no question about the sentiment of the business men of this community being strongly in favor of the five per cent increase in freight rates. Personally, I am strongly in favor of it for the reason that we cannot be prosperous unless we have railroad facilities of the very best and this we cannot expect unless the railroads have fair consideration which is demanded on account of the increased wages, improved equipment, increases in taxation, etc.

(2) There is no possible doubt about the sentiment of this community being in favor of the increase being granted as promptly as possible. It is believed that the improvement of railroads will materially help business conditions and our judgment is that the increase should be granted at once. No business can continue where heavier liabilities are forced upon it, unless a just allowance be made to increase its assets.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, A. B. Commesford, Newport Board of Trade. (Population 27,149.)

No action has been taken by this Board of Trade for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, S. H. Davis, Westerly Board of Trade. (Population 8,696.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, W. R. Williams, Woonsocket Business Men's Association (Population 38,125.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

RHODE ISLAND EDITORIAL COMMENT.

Newport (R. I.) News, November 28, 1913.

Now the railroads wish their wages increased, and if they should threaten to strike the public would not stand it a minute. If the companies should cease operating their lines there would be an instant demand from the great majority of the people that their charters be forfeited and the general Government or the States take over the lines, or the roads be offered for sale or lease to any company which would run them.

When the men desire more wages there is no way of refusing them except to stop the commerce of the country, but when the companies wish more wages they cannot resort to force. They must secure the permission of a branch of the Government, which, being inherently political, cannot be entirely unmindful of the number of votes cast by railroad employes and by wage earners in general. * * *

Operating expenses are increasing, and the railroads are not unreasonable in insisting that they must have larger revenues.

Providence (R. I.) Evening Bulletin, May, 1913.

It is an inescapable fact that a railroad, to sell its stocks and bonds, must not merely pay fair dividends, but must show a surplus of earnings at each year's close to put back into the property. What else can the railroads do except to apply for approval of higher rates? If the Interstate Commerce Commission should actually refuse to permit traffic rates to be raised the railroads would face a crisis. Kept by the Government from increasing their incomes and prevented by the Government (Erdman Arbitration Act) from restricting their expenses, they might just as well sell out to the Government and have done with it.

Providence (R. I.) Bulletin, November 29, 1913.

Why should the wholesale or retail merchant be permitted to mark up his goods, and the railroads be perpetually enjoined from doing likewise? The answer used to be found in the statement that a railroad is a natural monopoly, but that argument has lost most of its weight, for if it is a natural monopoly it is a highly regulated one. Its fangs have been drawn; instead of being a dangerous monster, as it used to be pictured, it is a needy creature pleading for fair play and a chance to make a reasonable living. The freight rate increase now asked for should be granted without delay. The roads need it immediately. It is a condition, not a theory, that confronts them.

The prosperity of all of us is wrapped up with that of our transportation systems. What affects them, advantageously or adversely, affects the rest of the community. The five per cent increase will not burden the consumer to any marked degree, while to withhold it would be to invite a serious public disaster.

Providence (R. I. Journal, November 27, 1913.

The public is largely responsible through its lawmakers, for the conditions that exist. Legislatures have compelled the companies to employ men who were not needed; the "full crew laws" passed at the behest of the labor unions, add millions to the expenses and give the public absolutely nothing in the way of safety or efficiency —they merely force the companies to pay high rates of wages to men who loaf in the caboose. Tax assessors everywhere are piling up taxes on railroad property. Arbitration Boards working under Federal laws are granting most liberal increases in wages. Every dealer in commodities used by the railroads has added from ten to fifty per cent to his prices. The result—decreasing net earnings and increasing gross receipts—is bad for the railroads and for the people served by them. The country is growing, but the development of the railroads is halted.

The remedy lies in a readjustment of freight rates to correspond with conditions forced upon the carriers. The railroads have a just claim for a new schedule which will restore their credit and induce investors to put their money into transportation enterprises. Rates in the United States are approximately one-half lower than on Government-owned lines in Europe; the five per cent advance proposed is too small to be a factor in retail prices, although the total additional revenue provided will help the roads materially in meeting their obligations to the public in the providing of better facilities.

Government ownership is not necessary; the companies generally are progressive and their management is good, and it would be a mistake to turn the railroads over to politicians who naturally would be under the influence of aggressive labor unions. But there is danger that this undesirable state of affairs will be brought about. Obviously if the Government persists in a policy of increasing expenses and cutting down revenue there will be a disaster, and the Government may be obliged to assume responsibilities for which it is unfitted and to carry a debt of billions of dollars, without the slightest compensating advantage.

The common sense course is to let the railroads earn enough to pay their bills and leave a reasonable profit for their owners. This is the rule in every other line of business and the necessities of the roads are so pressing that it will be strange if the Interstate Commerce Commission fails to hand down an equitable decision on the application.

Providence (R. I.) News Democrat, November 26, 1913.

That the railroads will get a chance to raise their freight rates, where they have asked for that privilege, seems very probable. There can be no question among fair-minded men that they are entitled to have more money for hauling freight than they are now getting, on the showing made by them before the Interstate Commerce Commission. Some have doubted the wisdom of many of the plans adopted for regulating the railroads, but for weal or woe public sentiment supports what has been done, and there is little reason to believe that there will be, for some time, any greater freedom given the railroads than they now have. But as they are forced to deal with the public along certain lines, and must pay greater wages to employes than formerly, and the cost of the things the roads buy is so much greater than formerly, simple justice would seem to require that where they show the necessity of higher rates to make a reasonable profit, they should be allowed to increase their rates.

Providence (R. I.) Tribune, December 7, 1913.

Immediate relief for the business situation still depends on the action of the Interstate Commerce Commission on the request of the railroads for increased rates. * * *

That some increase will be allowed is, it is said, being almost taken for granted. But the long drawn out proceedings of the Commission will not, at the earliest, come to a conclusion until some time in April, which leaves a long winter of discontent, with the possibility of constant additions to the army of unemployed. It is already pointed out that one railroad is planning to let out ten thousand men.

Perhaps this is the only remedy, though a hard one, for the unwisdom of politics. Politicians have been piling up restrictive laws and forcing from corporations much more than is just and even more than is safe. When they begin to hear from the great body of laborers who cast the votes more heed will be paid than heretofore.

Providence (R. I.) Journal, December 17, 1913.

Railroad construction has been checked throughout the country. Some roads have abandoned plans for extensions, finding it difficult to operate and maintain the tracks already laid. The public is being put to inconvenience by the lack of facilities which the companies acknowledge are urgently needed. Yet the money for improvements is not to be had because of the constantly narrowing margin between receipts and expenditures. The reports to the Interstate Commerce Commission show the situation clearly; gross earnings are the largest in the history of the railroads and net earnings are approaching the vanishing point. The obvious remedy for this most undesirable state of affairs is in rates corresponding to the increases in wages obtained through commissions appointed under Government authority and to the rising cost of everything used in maintenance and operation. The correction of these inequalities should not be postponed for an indefinite period, and the pending application should be decided upon its merits regardless of action by Congress on the proposition for conferring additional powers on the Interstate Commerce Commission.

Providence (R. I.) Journal, January 9, 1914.

Why should time be wasted in reviewing ancient history? The Commission does not ask for this kind of information when ordering rates reduced, and there is no lack of statistics which prove that a five per cent advance is reasonable and just.

NEW HAMPSHIRE.

REPLIES OF A FAVORABLE CHARACTER.

Secretary, J. H. Wight, Berlin Board of Trade. (Population 11,780.)

Personally, I am in favor of a reasonable increase in rates, although our Board of Trade has passed no resolutions relating thereto.

Secretary, James O. Lyford, Concord Board of Trade. (Population 21,497.)

No resolutions have been adopted by the Concord Board of Trade on the subject of increased freight rates. Nor has there been any manifest disposition in this community to protest against the increase. The attitude of our business men so far as I am able to learn, is that the railroads should have sufficient compensation to enable them to meet the demands of the public. The proper equipment of the railroads so that they can adequately discharge their duties as common carriers and promptly deliver freight is of more vital concern to our business than the question of an increase in charges for transportation. It is evident from the recent report of the Public Service Commission of this State that the railroads of this section have not sufficient revenue to give adequate facilities for the business they have to do after meeting the charges that now rest upon them.

Mayor W. W. Edwards of Franklin. (Population 6,132.)

(1) It appears to be the general sentiment of the business men and the people at large of this city that the rates should be raised.

(2) The sooner the increase is granted, the sooner will the railroads be enabled to serve the public on a safer and saner business basis.

Mayor H. E. Fay of Keene. (Population 10,068.)

(1) So far as I know, private opinion freely expressed, is very largely in favor of the increase.

(2) Yes; the sooner the better.

Secretary, William Littler, Keene Commercial Club.

While no official action has been taken by the Commercial Club of this city regarding the proposed advance in freight rates, the general sentiment is that a certain advance in rates is eminently justifiable on account of the growing expenditures and lessening net revenues of the railroads. On the other hand, there is a feeling that a flat percentage of increase would be preferable to the varying schedule of advances which would come into effect as a result of a classification by zones, as it is believed that under the latter system, the local shipper would frequently get the worst of it on the short haul, though directly in competition with points outside the state where the long haul traffic would not bear the same percentage of increase.

Mayor of Lebanon. (Population 5,718.)

(1) Yes.

(2) Yes.

Secretary, Wm. Savacool, Manchester Chamber of Commerce. (Population 70,063.)

There is a difference of opinion among our members as to just what should be done, but it would seem as though it would be necessary to make a reasonable increase in rates to put our New England rates on a self-sustaining basis again, and pay a reasonable return on the capital invested.

Secretary, A. B. Rotch, Milford Board of Trade. (Population 3,939.)

Our organization has taken no definite action expressing an opinion regarding increased rates, although recently a strong feeling has been created that an increase is needed. Probably most of our members are personally indifferent to rates.

Mayor H. B. Yeaton of Portsmouth. (Population 11,269.)

(1) Personally, I am in favor of the roads being allowed to make the advance.

(2) Yes, immediately.

Mayor F. B. Preston of Rochester. (Population 8,868.)

(1) I believe the business men of this vicinity are in favor of an increase in freight rates so that the carriers will be able to conduct their affairs with profit to themselves and to the public.

(2) I also believe that the public desires the increase to be made without delay and the details to be settled at a later time.

Secretary, Thos. A. Baril, Rochester Board of Trade.

As secretary of the Rochester Board of Trade, I would state that I know the sentiment is in favor of allowing the railroads to make a living.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Mayor, Daniel J. Daley, Berlin. (Population 11,780.)

(1) The chaotic condition of this general subject for some time past makes an intelligent answer to this question extremely difficult.

Mayor, Charles H. Foss, Dover. (Population 13,247.)

(1) As neither the Board of Trade nor any other organization here has passed any resolutions in relation to this subject, and as the local newspapers have published nothing which might be recorded as an expression of opinion of the public, I am unable to reply to your inquiry.

VERMONT.

REPLIES OF A FAVORABLE CHARACTER.

Mayor James E. Burke of Burlington. (Population 20,486.)

(1) My personal opinion is that present conditions demand an increase in railway revenue owing to the increased expense of maintenance which I believe to be of permanent nature.

Secretary, F. B. Houston, Burlington Commercial Club.

No action has been taken by our organization for or against the proposed increase in freight rates, but President J. L. Southwick, of the Commercial Club, expresses himself in favor of the proposed increase, provided better service be given by the carriers to the public instead of diverting it into other channels.

Burlington (Vt.) Free Press, December 16, 1913.

We have held that in railroading as well as in all other departments of business activity we can not reasonably expect improved service without increased expenditure. Somebody must pay for new railroad stations and improved means of promoting safety of travel and all that.

Montpelier (Vt.) Journal, May, 1913.

The vigilance of the Commission can be trusted to prevent the railroads from taking advantage of their present necessities to milk the public later on.

A. C. Mason, Secretary, Rutland Business Men's Association. (Population 13,566.)

We would advise that at a meeting of the Executive Committtee of this Association, held on the evening of January 28, 1914, the following resolution was adopted:

"*Resolved,* That the Rutland Business Men's Association unanimouslv favor the five per cent rate increase in the manner indicated in the railroads' recent petition to the Interstate Commerce Commission."

VERMONT EDITORIAL COMMENT.

Rutland (Vt.) Herald, November 26, 1913.

Much depends upon the decision of the Commission. The cost of railway operation has increased so rapidly that the roads cannot continue to give what the public demands in the way of transportation facilities unless they are permitted to earn more money. There is no doubt that the public would welcome a decision granting living rates to the carrying companies.

Rutland (Vt.) Herald, December 10, 1913.

No well-informed person in this country wants Government ownership of railroads, but it is as clear as anything can be that the roads cannot continue to meet demands for more and better transportation facilities unless they can get the money required to carry on their work. Mr. Brown is not alone in believing that the granting of the request for increased freight rates is a matter of vital importance to all the people of this country. There is reason to believe that favorable action by the Interstate Commerce Commission would be followed by an immediate revival of business.

Rutland (Vt.) News, November 29, 1913.

While shippers are not anxious for an increase in freight rates, there is evidence that the public is ready for a square deal for the railroads, the baiting of which has been more or less popular for the last few years. Legitimate prosperity for the railroads is as important to the public as to the roads themselves, and this they should have a chance to achieve. They are entitled to fair play.

St. Albans (Vt.) Messenger, May, 1913.

Whether railroads can live with increased taxes and increased wages, resulting in increased operating expenses, but with no increase in operating income for the unit of service rendered, is what the general public must determine. The investing public may arrive at a conclusion before the general public does, and, if so, great harm will be done.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Homer A. Flint, Montpelier Board of Trade. (Population 7,856.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

Secretary, James B. Campbell, St. Johnsbury Commercial Club. (Population 8,098.)

No action has been taken by this organization for or against the rate increase.

DISTRICT OF COLUMBIA.

REPLIES OF A FAVORABLE CHARACTER.

Secretary, Thomas Grant, Chamber of Commerce. (Population 331,069.)

While no formal resolution has been passed by this organization, one of our leading business men at the October meeting, in discussing the railroad proposition in which we are interested, during the course of his remarks stated plainly that the railroads were entitled to the increase in rates and that he, for one, would be very glad to pay his share. The gentleman in question is one of our largest shippers. His remarks were greeted with applause and no dissenting opinion was voiced.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, C. G. Gockeler, Washington Board of Trade. (Population 331,069.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

WASHINGTON EDITORIAL COMMENT.

Washington (D. C.) Evening Star, November 26, 1913.

There is no denying the force of the railroads' contention that they have been for some years under stress of a continuous process of expense increase without corresponding rate increase. It may be that the Interstate Commerce Commission, after a thorough investigation of the matter, will hold that the balance has been struck and that the ratio of rates and expenses is now correct, or it may hold that the pendulum was swung too far against the right of the railroads to earn reasonable dividends and authorize somewhat of an increase to restore the equilibrium. The principle involved is that of striking the true medium, with consideration both for the railroad stockholders, whose millions are invested in these properties, and the railroad users, whose millions are spent in transportation rates.

It is quite as undesirable to force the railroads too far under a burden of increasing expenses as to permit them to go too far in the direction of high rates and exececssive profits. The essence of federal regulation of rates is to maintain the right relationship between costs, rates and profits, and the present application sets in motion the process of readjustment that is quite as desirable from the point of view of the railroad user as from that of the railroad owner. For it is to the interest of the public that the railroads should prosper sufficiently to improve their lines and extend them so as to grant increasingly valuable service. Railroad stagnation, from whatever cause, is harmful to the people, and an enlightened public sentiment should always favor the extension to the transportation lines of a fair scale of earnings, which cannot be assured, save by the adoption of a fair scale of rates.

Washington (D. C.) Herald, May, 1913.

Coming down to hard facts, the interests of the railroads and the public are really identical, because one cannot suffer losses without the other being affected thereby. No man, no corporation, can spend a dollar when less than that dollar is earned.

Washington (D. C.) Herald, December 8, 1913.

The mileage of our railroads is so enormous, the number of their employes is so great, they are such huge purchasers of basic products, like iron, steel, timber, etc., that naturally if they are at a low ebb, a prodigious number of other industries suffer the same adversity. Therefore, for the general prosperity of the country, it is undoubtedly advantageous for the railroads to receive permission to raise rates and to re-enforce their dwindling net revenues.

Washington (D. C.) Herald, December 8, 1913.

Many foreign railway experts come to America every year to study the efficiency methods of railroads here, and if American railway freight charges be compared with those prevalent in Great Britain and on the Continent, it will be quickly seen how well off our shippers in this country really are. This does not mean that American railways have reached the highest point of efficiency possible. But it does mean that on the whole they are well and economically handled and deserve the strong support of the community.

The Interstate Commerce Commission is also well aware that, as the prosperity of the railways rises and falls, so generally industry in this country rises and falls. The mileage of our railroads is so enormous, the number of their employes is so great, they are such huge purchasers of basic products, like iron, steel, timber, etc., that naturally if they are at a low ebb, a prodigious number of other industries suffer the same adversity. Therefore, for the general prosperity of the country, it is undoubtedly advantageous for the railroads to receive permission to raise rates and to reinforce their dwindling net revenues.

Washington (D. C.) Herald, December 10, 1913.

The railroads need $1,000,000,000 of new money next year. If the Interstate Commerce Commission gives them an increase in rates, thereby making their dividends fairly safe, and making their margin of earnings for bond interest secure, there can be no reasonable doubt that the railroads will be able to secure their requisite funds. If this clearly may be foreseen, apprehension on the part of business men in general will disappear. They will pluck up heart and go on with normal and increasing business.

On the contrary, if the Commission declines this increase and the transportation companies find themselves badly up against it, the railroad receiverships that may result will mean a far greater letting up in business than is evident to-day, and will mean a dismal return to the empty dinner pails that began to resound hollow and sad just twenty years ago last spring.

Washington (D. C.) Post, December 29, 1913.

Can the government afford to play fast and loose with the railroads in the matter of an advance of five per cent in freight rates?

The Interstate Commerce Commission a while ago called upon the railroads for a mass of information, statistical and otherwise, which, it was stated, was to be used as a basis for determining the justice of the request for an increase in earning capacity. There is no complaint of failure to comply with the Commission's orders. The desired data were submitted, hearings held for presentation of testimony and argument by both shippers and carriers, the inquiry closed, and the case taken under consideration for final decision. There is no public protest in any quarter against giving the railroads the square deal as between the public service they perform and the public that is served.

Suddenly and inexplicably the case is reopened by the Commission. It is given out, apologetically, that while the railroads have submitted elaborate and helpful information showing losses in net operating returns and net income, "fundamental questions" have arisen in the proceeding which, the Commission now feels, call for a world of additional necessary data in order to determine "the general course carriers may pursue to meet the situation," whatever that vague and unsatisfying use of terms may mean.

Washington (D. C.) Star, November 26, 1913.

It would be unprofitable to enter upon an analysis of the technical facts presented by the railroads in their statement of the case in favor of an increase of rates. The Interstate Commerce Commission is so amply qualified to weigh and measure the facts and figures with respect to freightage incidents and operation cases of the several lines and groups of lines that the interest of the public can well be confined to the case of the railroads as a whole. This is readily understandable and when grasped in its true bearings leaves little reason for the Interstate Commerce Commission to hesitate about granting the small advance in rates asked at this time.

DELAWARE.

REPLIES INDICATING UNCERTAINTY OR DIVIDED OPINION.

Secretary, Wilmington Chamber of Commerce. (Population 87,411.)

No action has been taken by this organization for or against the proposed increase of five per cent in freight rates in Official Classification territory.

DELAWARE EDITORIAL COMMENT.

Wilmington (Del.) Every Evening, May, 1913.

The rates for freight hauling on the railroads of the United States are said to be the lowest in all the world, and now it is apparent that they are too low. Therefore, it becomes an interesting question what the railroads will do if the Interstate Commerce Commission refuses to allow them to make the proposed five per cent advance in freight rates. The impairment of railroad facilities would seriously impair the conduct of general business throughout the country.

Wilmington (Del.) Every Evening, November 26, 1913.

Who would have imagined, a few years ago, that the railroads of the country would be required to make application for a subordinate branch of our general government for permission to perform an act so manifestly within their own rightful province as an increase in rates to an extent requisite to the increased revenues that they stand in pressing need of? But such is the situation to-day, and it is a very serious one for the railroads and the people.

The decrease in net earnings the roads attribute to unusual additions to their expenses, specified as follows:

Increased wages as a result of arbitration and mediation, which have added many millions to the salary payments.

Increase in the number of men employed in compliance with "full crew" and similar laws.

Passage of workmen's compensation and like legislation.

Particularly heavy additions to the tax payments.

Higher prices for materials and equipments, proportionate to the general "high cost of living."

These factors that make for greater cost of operation the roads regard as virtually permanent, and with such a condition staring them in the face they say they must find some way to offset it.

This is a convincing presentation, made by men of experience, who speak with a knowledge of the affairs of the railroads generally, and especially of those under their immediate supervision. Although it is a presentation of one side only, it is hard to conceive how this situation can be controverted by those who have only belief and theories to offer in contravention.

Wilmington (Del.) Journal, December 12, 1913.

It must be clear to the public that with such conditions existing something must be done for the relief of the railroads if they are to continue to give to the people the present efficient service. No one wishes to have increased freight rates, but if the expenses of the railroads have increased and their earning power has decreased, then, certainly, the public interest demands that there shall be a readjustment that will place them upon a safe and fair financial footing. Our country would suffer untold injury were it compelled to rely upon bankrupt, or near-bankrupt, railroad companies for its freight and passenger transportation facilities.

Wilmington (Del.) Journal, December 12, 1913.

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Wilmington (Del.) Every Evening, December 23, 1913.

President Wilson has announced that the one policy of his administration will be generous co-operation with business interests for procedure under the law, instead of antagonism and continual collision.

This intimation of a cessation of the unjust and debilitating war that has long been waged against corporate business no doubt includes the railroads. They have been harassed by continually increasing expenses of operation, especially in higher wages and higher prices for material. Now they are asking permission to make a slight increase in freight charges, for the purpose of advancing revenues to the required point. Thus far the attitude of the Interstate Commerce Commission has been hostile to the request of the railroad managers, but may not the attitude of that body change in pursuance of the policy of the administration as announced by President Wilson? It is hoped so.

Wilmington (Del.) Journal, December 23, 1913.

In considering the application of the Eastern railroads to make a five per cent increase in freight rates, the Interstate Commerce Commission cannot fail to take into account the way in which railroad wages have been increasing. Statistics filed by the Commission show that the various railroads in the territory affected by the application paid out $506,000,000 in wages and salaries in the year ending June 30, 1913. Estimates for twenty-nine of the thirty-eight railroad systems concerned show an increase in wages for 1913 of $48,618,972.41 due to changes in rates of pay and working conditions.

Those are figures that cannot be ignored by those who are passing upon the sufficiency of existing rates when the largely increased expenses of the transportation lines are taken into consideration.

RECEIVED TOO LATE FOR CLASSIFICATION.

Alford A. Wood, Secretary, Butler Business Men's Association. (Population 20,728.)

I am instructed to inform you that our organization favors the increase in freight rates as indicated in the recent petition to the Interstate Commerce Commission. The matter has been thoroughly discussed by representatives of the large business enterprises in Butler and has been unanimously endorsed.

Theodore Heysham, Secretary, Norristown Chamber of Commerce. (Population 27,875.)

At the regular monthly meeting of the Norristown Chamber of Commerce held on February 10th, that body unanimously endorsed the petition of the railroads to be permitted to increase their freight rates in the manner indicated in their recent petition to the Interstate Commerce Commission.

MICHIGAN.

Mayor of Niles. (Population 5,156.)

(1) I find it the sentiment of the business men of this city that carriers should be granted an increase of five per cent in their freight rates.

(2) Yes.

WISCONSIN.

T. E. Mead, Secretary, Baraboo Commercial Association. (Population 6,324.)

As to the opinion of the members of our Club regarding the proposed increase in freight rates, if a small increase is necessary we do not feel that it would work any hardship on any one if it were granted.

I. A. Herrick, Secretary-Manager, Antigo Commercial Club. (Population 7,196.)

Our organization is in hearty sympathy with any advance in rates that the business of our great transportation lines demand. Accordingly, therefore, the enclosed resolutions are forwarded to you for such use as you may desire to make of them:

Whereas, The increased cost of natural production in raw materials and the added labor expense adds materially to the basic cost of public carriers for freight and

Whereas, Sound business requires all enterprises to be conducted on a paying basis, and

Whereas, The increased demands for freight facilities in running wear and improved road beds require a great outlay on the part of such common carriers,

Resolved, That it is the unanimous sentiment of the management of the Commercial Club of Antigo, that reasonable advances in accordance with approved schedules prepared by the Interstate Commerce Commission are approved, wherever such advance in freight charges produce quicker, safer and better service.

COMMERCIAL CLUB OF ANTIGO,
Frank J. Finncane, President,
Fred L. Berner, Secretary,
I. A. Herrick, Secretary-Manager.

SYNOPSIS OF THE

Fifty-Ninth Annual Report of the Northern Central Railway Company

GENERAL OFFICE.

BALTIMORE, MD., 18th February, 1914.

The Board of Directors herewith submit to the Stockholders of The Northern Central Railway Company a synopsis of their Annual Report for the year 1913:—

Rail operations—revenues		$13,563,721.66
Rail operations—expenses		11,996,728.12
Net revenue—rail operations		$1,566,993.54
Auxiliary operations:		
Total revenues	$14,900.50	
Total expenses	8,343.04	
Net revenue		6,557.46
Net railway operating revenue		$1,573,551.00
Railway tax accruals		514,193.62
Railway operating income		$1,059,357.38
Other income:		
Rent income	$414,193.80	
Income from dividends and interest on investments	1,198,639.92	
Miscellaneous income	264,744.31	
		$1,877,578.03
Gross income		$2,936,935.41
Deductions from gross income:		
Deductions for lease of other roads	$283,961.11	
Interest deductions for funded and unfunded debt	377,354.01	
Hire of equipment, rent deductions, and miscellaneous deductions	572,548.42	
		1,233,863.54
Net income		$1,703,071.87
Appropriations to sinking and other reserve funds	$80,275.75	
Dividend appropriations aggregating 8 per cent.	1,547,400.00	
Appropriations for Additions and Betterments:		
Expended during the year	75,396.12	
		$1,703,071.87
Amount to credit of Profit and Loss, 31st December, 1912	$9,609,051.29	
Sundry credits during the year	418,282.47	
		$10,027,333.76
Sundry debits during the year		92,420.10
Balance to credit of Profit and Loss, 31st December, 1913		$9,934,913.66

GENERAL BALANCE SHEET—(Condensed).

31ST DECEMBER, 1913.

ASSETS.

Property Investment:		
Road and Equipment		$34,625,182.26
Securities owned		7,108,726.23
Other Investments:		
Miscellaneous investments		2,401.00
Working Assets:		
Cash	$437,167.22	
Securities issued or assumed—held in treasury	12,000.00	
Balances due from other companies	145,054.10	
Net balances due from agents and conductors	341,970.82	
Miscellaneous accounts receivable	389,229.50	
Materials and supplies	717,121.33	
		$2,042,542.97
Accrued income not due		98,287.70
Deferred Debit Items:		
Temporary advances to proprietary, affiliated and controlled companies	$895,475.04	
Working funds	1,980.00	
Cash and securities in sinking and redemption funds	617,000.00	
Cash and securities in insurance funds, etc.	1,608,162.39	
Other deferred debit items	22,052.18	
		3,144,669.61
Total		$47,021,809.77

LIABILITIES.

Capital stock		$19,342,550.00
Mortgage, bonded and secured debt		7,296,262.07
Working Liabilities:		
Loans and bills payable	$785,000.00	
Balances due to other companies	915,951.96	
Audited vouchers and wages unpaid	643,861.73	
Miscellaneous accounts payable	1,251,848.37	
Matured interest, dividends and rents unpaid	777,727.50	
Other working liabilities	6,396.81	
		4,380,786.37
Accrued liabilities not due:		
Unmatured interest, dividends and rents payable	$162,971.33	
Taxes accrued	216,452.42	
		379,423.75
Deferred credit items		210,932.20
Appropriated Surplus:		
Additions to property since 30th June, 1907, through income	$3,226,909.21	
Reserves from income or surplus:		
Invested in sinking and redemption funds	617,947.38	
Invested in other reserve funds	$1,404,452.06	
Car Trust principal charged out in advance	227,633.07	
		5,476,941.72
Profit and Loss		9,934,913.66
Total		$47,021,809.77

TRAFFIC.

The number of tons of freight carried was 24,264,748, an increase of 1,392,555 or 6.09 per cent. The number of passengers carried was 5,405,363, an increase of 296,185, or 5.80 per cent.

GENERAL REMARKS.

The income statement shows that the total rail revenues for the year 1913 were $13,563,721.66, an increase of $719,005.59 over the previous year. This increase is chiefly in the freight and passenger revenue.

Of the increase, $21,290. 43 was derived from merchandise freight traffic; $384,741.81 in coal and coke traffic; and $250,608.04 in passenger revenue due very largely to travel on account of the inauguration of the President and the fiftieth anniversary of the Battle of Gettysburg.

The rail operating expeness were $11,996,728.12, an increase of $1,052,721.56 over 1912, of which $158,299.89 is in maintenance of way and structures due to higher wages and heavier outlays for bridges, buildings and track material; maintenance of equipment increased $503,137.13, due to higher wages, greater use, and consequently increased repairs to locomotives and freight cars and higher charges to properly provide for equipment depreciation; while transportation expenses increased $352,308.21, due generally to increase in wages, greater yard and freight station expenses due to increased traffic and higher charges for fuel.

In connection with the question of wages and the arbitration thereof with your employes under governmental legislation, it will be recalled that within the past two years adjustments of such controversies have been reached in the cases of the enginemen, firemen, conductors and trainmen. While in principle the advantage of settling wage disputes by arbitration is conceded, in practice it has so far resulted not only in increasing the wages of the employes, in whose behalf arbitration was directly invoked but has largely augmented the wages by specific restrictions in operation, so that it is difficult to secure compensatory service for the wages awarded, and has also generally necessitated various adjustments in the wages of other employes. As the control of railroad rates is by law vested in another governmental body, the railroad companies have not as yet been able to obtain advances therein that would enable them to meet the increased burdens that have been thus placed upon them. In other words, while for the purpose of avoiding interruption and delay to traffic, the railways have yielded to the demands of the public that wage questions shall be submitted to arbitration, and have also met other heavy expenses resulting from legislation, both State and Federal, and thus in some cases have had their expenses increased beyond their ability to meet them and leave a margin as a basis for credit or for any return to their stockholders, they have had no protection through the authorization of the reasonable advance in rates for which they have applied to the Interstate Commerce Commission. At present, therefore, your management is compelled to use every measure to conserve its resources and seriously restrict its capital expenditures.

Railway taxes continue to show an increase, being $49,691.79 greater than in 1912, caused by an increase in the federal taxes.

Other income shows an increase of $389,401.69 over the previous year, of which $36,433.00 was received for the use by other companies of facilities at Baltimore; an increase of $166,262.50 in dividend income, $122,500 of which was from holdings of Union Railroad Company stock and increased dividends resulting from the exchange of Baltimore and Ohio Railroad stock for that of the Southern Pacific Company, to which reference is hereinafter made; there was an increase of $134,601.59 in miscellaneous income principally on account of the larger sum paid by the Pennsylvania Railroad Company as its proportion of the deficit in operating the Elmira and Williamsport and Elmira and Lake Ontario Railroads forming the Elmira Division.

The deductions from gross income increased $128,676.87, the principal increase being in the item "Hire of Equipment," which is $80,518.28 higher than in 1912, because of increased use of freight cars of other companies and the higher per diem rate in effect.

The net income for the year was $1,703,071.87, a decrease of $122,361.84 compared with 1912. After deducting the regular semi-annual dividends aggregating eight per cent, and the appropriation to sinking and other reserve funds amounting to $80,275.75, there remained a balance of $75,396.12, which was used on account of additions and betterments.

The efforts made to economically handle your freight and passenger traffic is evidenced by an increase of only 0.12 per cent in the freight train mileage, notwithstanding the tonnage increased 6.09 per cent and the ton miles 5.75 per cent. The average freight train load was increased 29.23 tons. The passenger train mileage increased only 3.61 per cent despite an increase of 5.80 per cent in the number of passengers carried and an increase of 12.91 per cent in the passenger mileage. However, as explained elsewhere, the continuing increase in expenses, caused principally by increases in wages, taxes and legislative enactments, has decreased the net freight revenue per ton mile to six-tenths of a mill and the net revenue per passenger mile to sixteen one-hundredths of a mill.

The necessity for the enlargement of freight terminals in the City of Baltimore makes it evident that this work can not be much longer deferred without causing very serious congestion and a considerable increase in the expense of handling traffic, especially in the Calvert District, where the volume of traffic is beyond the capacity of the present tracks and station. Therefore, freight yards at Monument and Constitution streets, and at Aliceanna street and Central avenue were improved; and the real estate has been acquired and final plans are being formulated for pier extensions at Canton. The necessary real estate required for the enlargement of the Calvert Street Terminals was also purchased and the company has entered into negotiations with the City of Baltimore for the necessary revision of streets to materially enlarge the yard and station at that point.

Little progress has been made during the past year towards a termination of the litigation instituted by a few of the stockholders which prevents the consummation of the proposed lease of the property and franchises of your company to the Pennsylvania Railroad Company.

The suit involving the validity of the sale and transfer by this company in the year 1894 to the Philadelphia, Wilmington and Baltimore Railroad Company of 5,000 shares of the stock of the Union Railroad Company of Baltimore, has been terminated by a decision of the Court of Appeals of Maryland, fully sustaining the action of your company in this matter.

There are still pending the other suits referred to in the last annual report. The court in which these are pending has been asked to fix a time for their hearing, and this request we are advised will be considered.

With reference to the proposed disposition, as heretofore announced, of the security holdings of anthracite coal companies, in which your company and the Pennsylvania Railroad Company are respectively interested, an agreement has been reached for the sale of the lands leased to and operated by the Mineral Railroad and Mining Company, in which this company is interested.

Your company leased for 999 years from the Shamokin Valley and Pottsville Railroad Company, in addition to the railroad and other property thereby demised, certain coal lands in the vicinity of Mt. Carmel and Shamokin, Northumberland County, Pennsylvania. Pursuant to the authority conferred by such lease, it sublet these lands to the Mineral Railroad and Mining Company for the unexpired term of said lease terminating February 27th, 2862, but the Mineral Railroad and Mining Company has been unable to pay the royalties provided for in said sublease. No action, however, was taken looking to a termination of this sublease, due to the belief that better results would not follow a change of lesseeship unless your company would permit the lessee to mine only the profitable seams, and thereby considerable bodies of coal would consequently remain unmined and be ultimately lost.

During the past year your Board ascertained that the Susquehanna Coal Company was prepared to consider the purchase of the lands embraced in the lease if it could acquire the interests therein of the Mineral Railroad and Mining Company, of this company and of the Shamokin Valley and Pottsville Railroad Company.

The Mineral Railroad and Mining Company was prepared to assign all the interest that it had in the coal lands in question, and this interest has been assigned, effective January 1st, 1914, to the Susquehanna Coal Company. The interest which the Shamokin Valley and Pottsville Railroad Company had in these lands was almost a nominal one, inasmuch as all of the coal, if mining operations were continued upon the lands and the present rate of production maintained, would be mined and removed within fifty years, and the payment to which it is entitled under the lease is a fixed sum not affected by the amount of coal mined from these coal lands. The lands, however, were subject to a mortgage of the Shamokin Valley and Pottsville Railroad Company for $2,000,000, and in order that the Susquehanna Coal Company might acquire a title to the lands free and clear of all liens, it was necessary that this mortgage should be cancelled and extinguished. This company is the holder of all the bonds secured by this mortgage, part of which are held in the Coal Land Depreciation Fund and the balance in your treasury, with the expectation of their transfer to that fund as the lands are exhausted, and an agreement has been reached with the Shamokin Valley and Pottsville Railroad Company by which this company, in consideration of the conveyance to the Susquehanna Coal Company of the interest of the Shamokin Valley and Pottsville Railroad Company in the lands, will surrender to that company the $2,000,000 of bonds and the mortgage securing the same will thereupon be extinguished.

An agreement has also been reached between this company and the Susquehanna Coal Company by the terms of which the coal company will pay upon the acquisition of the interests of all of the three parties above named, a minimum price of $2,600,000, payable in the five per cent bonds of that company, exchangeable for its first mortgage bonds if and when the same are issued by that company, the actual price to be determined under the advice of an expert, appointed for such purpose by both parties, but who shall not be affiliated with either of the companies.

Your company has received from the Mineral Railroad and Mining Company $412,500 in repayment of advances heretofore made to that company, which sum has been credited to your profit and loss account. As no purpose will be subserved by continuing the corporate existence of the Mineral Railroad and Mining Company, steps will be taken looking to its dissolution.

The Susquehanna Coal Company will not purchase the railroad tracks leading to the several collieries located upon the coal lands above mentioned, and as the railroad of your company now reaches these lands and has larger markets upon its lines for the coal which will be mined therefrom, it should continue to enjoy the transportation of that tonnage.

Upon the completion of this transaction your company will have in its treasury securities of the Susquehanna Coal Company, with reascnable assurance that the interest thereon will be paid, and it will in addition be relieved from any obligation to furnish additional capital, which will no doubt be required to operate the mines and make future improvements. The sale to the Susquehanna Coal Company is also made to insure the continued operation of the unprofitable and well as the profitable mines, and thereby conserve the coal supply, and so that should the securities of that company, held by the railroad companies be sold, the new owners will obtain possession of the property subject to such mining obligations.

The company sold its 10,487 shares of Baltimore and Ohio Railroad Company common stock and 10,000 shares of preferred stock, having a total par value of $2,048,700.00, and received in payment therefor 18,487 shares of the capital stock of the Southern Pacific Company, having a par value of $1,848,700.00. In completing the transaction the stock of the Southern Pacific Company was valued at par, the common stock of the Baltimore and Ohio Railroad Company at the same figures, and the four per cent preferred stock at $80 per share, which was its approximate market value. The company is receiving greater dividend returns from the ownership of the Southern Pacific Company stock, and it is a security that under stable business and financial conditions can, no doubt, be sold on terms advantageous to your company.

During the year your company acquired $270,000 par value of Norfolk and Western Railway Company convertible 10-25 year four and one-half per cent gold coupon bonds.

Details of the organization changes, and statements covering the financial, traffic and operating results will be found in full in the annual report.

By order of the Board,
Samuel Rea,
President.

A copy of the annual report has been mailed to each stockholder and additional copies may be obtained by applying to or addressing:

H. D. Thompson, Assistant Treasurer,
General Office,
S. E. corner Calvert and Centre Sts., Baltimore, Md.
J. W. Marshall, Assistant Treasurer,
85 Cedar St., New York City, N. Y.
Lewis Neilson, Secretary.
Executive Office, Broad Street Station, Philadelphia, Pa.

An "Accident-Proof" Railway in England

(From our London Correspondent.)

THREE years ago A. R. Angus, a wealthy Australian, came to Great Britain with the firm intention of building an accident-proof railway. He leased twelve miles of permanent way from the West Somerset Mineral Railway at Watchet, purchased two powerful locomotives from the Great Western Railway, and quietly but with untiring energy proceeded to solve the problem.

At the time when the public mind was deeply stirred by the Aisgill accident and the revelations at the subsequent inquiry Mr. Angus wrote to the London *Daily Mail* announcing boldly the realization of his ambition.

It has been sought to provide devices which shall be proof against the failure of the man or the machine, and which are reliable, simple and cheap. The two locomotives have for a long period been run daily at express speeds over the prepared tracks until conclusive results have been obtained. A train equipped with the apparatus can run at the highest speed permissible in accordance with safety and will be fully protected even in a dense fog.

The *Daily Mail*, which had already raised the question whether some means of automatically stopping a train when the signals stand at danger could not be introduced, at once sent a representative to Watchet. At Mr. Angus's invitation this representative rode in the cab of one of the engines over the "fool-proof" system. He thus recounts his experience.

The little railway is entirely devoid of the ordinary signals. At first we ran at the rate of sixty miles an hour over a track clear of traffic, passing over the three sections into which the line is divided. As the engine entered each section a bell with a deep note sounded denoting that the line was clear.

"Now," said Mr. Angus, "we shall see what happens when another engine is on the line." He rang through from a control box to headquarters and instructed the driver of the other locomotive to run into a section. It is a single-line railway, so the second locomotive was on our line direct ahead.

"We will make a rush at speed for that engine," said Mr. Angus. "The driver will pretend to take no notice of it and we will see what happens." The driver opened the throttle and the locomotive started off. Its speed became greater and greater. Ahead on our line was the other locomotive. There seemed no apparent reason why we should not crash into it. Then suddenly the whistle of the engine shrieked; yet the driver had touched nothing in the ordinary course.

This shrill whistle would be the warning to the driver that he was in immediate danger, but our driver for the occasion was supposed to be deaf. A moment or so after the whistle there came a hissing of steam and the grinding of brakes. The engine slowed abruptly and stopped dead. Still the driver had touched nothing. The brain of the engine saved us from disaster.

How it is all done became evident from an examination of the permanent way and control boxes. Each section of the line is guarded at both ends by three ramps (metal contrivances between the rails), which are connected by telegraph wires to an instrument in a control box. The locomotive is also fitted with an electrical contrivance brought into contact with the ramp by a shoe depending from the engine. The brain of the engine automatically telegraphs to the instrument in the control box, which instrument telegraphs back that the section is free from traffic. A bell rings in the cab of the engine to notify the driver.

If, however, the section is blocked, the brain in the same way causes a whistle to blow, when the driver should stop the train. If he fails to do so, then, and only then, does the locomotive, by means of the electrical contrivance take the control out of his hands. It shuts off steam and applies the brakes. He cannot then drive until freed by some responsible person at a control. In the controls everything is similarly automatic.

The system absolutely eliminates the personal element. If the driver makes an error the train stops.

In commenting on the narrative thus given by its representative of the working of the "foolproof" railway, the *Daily Mail* put several questions with regard to Mr. Angus's invention. Could it be applied on a scale large enough to cover the innumerable complications of an ordinary railway system? How great is the liability to error? What is the cost of the installation?

To these questions Mr. Angus at once replied in a long and very interesting letter. He wrote: I would say definitely as a result of my years of study of this problem, that every form of railway operation now required to be carried out on any class of railway tracks can be carried out by means of these inventions, in which the risk due to the man or the machine will be eliminated and the cost of installation and maintenance will be comparatively small.

As regards question (2) that is, its liability to error: In the first place we have the fact that the devices used are well known devices (adapted to my needs) whose operation and life's working and history have been recorded for many years past, and by their wide use in most countries of the world answer the question as to their practicability and reliability for general public use.

One of the series of tests carried out by my staff, as directed, consisted in locking up in a suitable box the apparatus by which the locomotives automatically protect themselves from collision. These locked-up instruments were not looked at, let alone touched by my staff, for several months at a time, and the locomotives were driven up and down the tracks daily, at speeds varying from very slow to express speed, and the results were excellent, as no delay to traffic arose during that period. The locomotives giving emphatic "line clear" and "all in order" indications. Other tests consisted in interfering with or deranging the apparatus, cutting out the generator, short circuiting, destroying connections, etc., and the locomotives invariably have in the tests in question a danger intimation, and on ignoring these danger intimations each locomotive invariably shut off its steam and applied brakes.

As regards question (3)—viz., the cost of installation: To answer this question definitely one must have plans of the proposed installation, as railway tracks of necessity differ in class, e. g., (a) single tracks, (b) double tracks, (c) sidings, (d) junctions, (e) termini. The most difficult case, in my opinion, and contrary apparently to the generally accepted idea, lies in the equipment of single railway track, that is track on which a train may in turn run in either direction along the same single tracks, as we have to consider not only safety but traffic problems of no mean order.

The actual cost of equipping single tracks as mentioned (assuming that the sections for some thousands of miles average four miles) should not exceed thirty pounds ($150) per mile, if apparatus such as I have early employed at Watchet be used. The price will vary more or less according to the length of average section used and according to which type of my apparatus is finally used. The cost of equipping the average locomotive should not exceed twenty-five pounds ($125) per locomotive but may be increased or decreased in cost according to the type of appliances used.

In some British railways more than one locomotive per mile of track is used, but in many cases the average appears to be about one locomotive to each two miles of track, and in this latter case, if we add the cost of the locomotive to each mile of track equipped, then the actual total cost should not exceed about $225 per mile equipped with the apparatus for single tracks as mentioned.

The final claims of inventions such as these, and, indeed, of all contrivances for increasing the safety of those who travel on our railways, must, of course, be judged by the companies themselves. Past experience, however, goes to show that the companies have not been always very eager to encourage the inventor or in this great age of mechanical progress to march with the times and bring their antiquated systems up to date.

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ANNUAL MEETING NOTICE.

UNITED STATES RUBBER COMPANY.

New Brunswick, N. J., February 6th, 1914.

Notice is hereby given that the Twenty-second Annual Meeting of the Stockholders of the United States Rubber Company will be held at the principal office of the Company, in the City of New Brunswick, New Jersey, on Tuesday, March 17th, 1914, at 12 o'clock noon, for the election of Directors and for the transaction of any and all business that may properly come before the meeting, including considering and voting upon the approval and ratification of all purchases, contracts, acts, proceedings, elections and appointments, by the Board of Directors or the Executive Committee since the Twenty-first Annual Meeting of the Stockholders of the Company on May 20th, 1913, and of all matters referred to in the Twenty-second Annual Report to Stockholders, which will be sent to Stockholders before the meeting, and in the proceedings of the Board of Directors and the Executive Committee, which until the meeting, will be open to examination by Stockholders of record during business hours at the New York Office of the Company, 1790 Broadway.

The Transfer Books will not be closed, but the New Jersey Corporation Law will not allow to be voted any share of stock which shall have been transferred after February 25th, 1914.

By order of the Board of Directors.

SAMUEL NORRIS, Secretary.

NEW TRAFFIC BOOKS

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These books form in part the basis of our **course of instruction by correspondence in Interstate Commerce and Railway Traffic.**

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VOL. LVIII. MARCH, 1914 No. 3

Important Developments in the Transportation Field

ANNUAL MEETING OF UNITED STATES CHAMBER OF COMMERCE

The second annual meeting of the Chamber of Commerce of the United States of America which was held in Washington, D. C., on February 11, 12 and 13, proved by far the most important business gathering of the present calendar year. The attendance was remarkable and the members listened with the closest attention to the discussion of the various industrial and commercial problems which came before the organization.

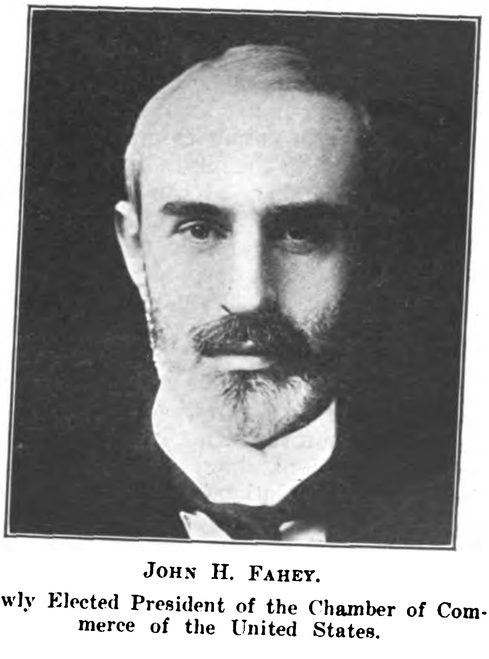
Too much importance cannot be placed upon the activities of this body. Composed as it is of prominent business men from all sections of the country, it represents in no small measure the industrial backbone of the United States and the alert manner in which its members are discussing the problems in which are involved economic justice and progress, should act as a healthy check upon politicians of demagogic tendencies. The interest which is being taken in the work of this organization is strikingly indicated by the growth in its membership. On May 31, 1912, the National Chamber consisted of forty-four organizations with 37,472 members in fifteen States. On January 31, 1914, it consisted of 506 organizations with 244,870 members in forty-seven States.

The second annual meeting was of such a character as to constitute a most important step in the progress of the federation of the organized business forces of America. The report of the Board of Directors indicated masterly activity in the direction of great public questions and showed the ability of the National Chamber to stimulate in the most effective form, present day business opinion on matters of great National moment.

President Harry A. Wheeler, who has so ably represented this organization during the past two years, was succeeded by Mr. John H. Fahey, of Boston, who was a leading force in all conferences in Washington and elsewhere that preceded the organization meeting of April, 1912, and who has been chairman of the executive committee for two years.

The first and second sessions were devoted to the report of the Board of Directors, the address of President Wheeler and to the reports of the committees on patents, trade marks and copyrights; banking and currency; and statistics and standards. An impressive feature of the second session was provided in the four speeches dealing with the methods of commercial organizations.

The third session, held on the evening of February 11th, proved of great interest not only to the members but to a great many visitors on account of the addresses delivered by public officials. The Honorable William P. Wilson, Secretary of Labor, spoke on "The Relation of the Department of Labor to Industries and Commerce." His speech strongly developed an argument relative to the mutuality of interest existing between labor and capital. He pointed out that disputes between these elements have to-day become more acute because of the almost complete disappearance of personal relationship between employer and employe and he asserted that one of the purposes for which the Department of La-



JOHN H. FAHEY.
Newly Elected President of the Chamber of Commerce of the United States.

bor had been created was to step in when relations become strained and offer its good offices in an effort to bring the contending parties together. He pointed out that when a stoppage of work takes place it means an economic loss which involves not only the employers and employes, but the entire community of forces that ought to be valuable in producing valuable economic results. Secretary Wilson suggested that a great deal depends in getting the conflicting parties to work out their problem themselves and in getting them to realize the mutuality of their interests. This he pointed out develops a spirit of co-operation which is bound to prove beneficial. If they fail to agree, however, it then becomes the duty of the new department to act as a mediator not for the purpose of imposing either upon the employer or employe the particular views of the department, but for the purpose of trying to find some mutual basis upon which the two parties may agree.

The second impressive speech of the evening was delivered by the Honorable Charles A. Prouty, Chief of Valuation of the Interstate Commerce Commission on "Physical Valuation of Railroads," and is reproduced in full in another section of the issue. Mr. Prouty's address gives an understanding of the vast task involved, the time required for its completion, the estimated expense and the motives that prompted the legislation. It will be read with much interest by all railway officials.

Another important feature of this session was a speech from the floor delivered by Bernard J. Shoninger, president of the American Chamber of Commerce in Paris. His remarks dealt in a general way with the intricate trade relations existing between this and European countries and he urged National interest in the Sixth International Congress of Chambers of Commerce to be held in Paris in June.

The morning and afternoon sessions of February 12th, were devoted to a discussion of anti-trust legislation and it was apparently the consensus of opinion of the members present that they had never participated in a more valuable meeting nor had the great industrial questions of the day been placed before them more clearly. These two sessions should have a marked effect upon the National mind relative to the problems involved in anti-trust legislation. The speakers, each in his own way, developed some phase of the subject and their addresses taken altogether practically covered the tremendous problems involved in, first, concentration of industry in the United States; second, interlocking directorates and holding companies; third, the rights of private parties to make use of Government action under the Sherman law; fourth, the proposed interstate trade commission, and fifth, the question of industrial efficiency of the trust form of business organizations.

The subject was opened for discussion by the Honorable William C. Redfield, Secretary of Commerce, who it is interesting to note, regards the trust form of organization as having great possibilities of industrial efficiency involved in it. Mr. Redfield was followed by President Charles R. Van Hise, of the University of Wisconsin. The speech as a whole, represents a demand for clearer definition of terms so as to avoid action based upon misapprehension. Mr. Victor Morawetz, of New York, delivered the next address in which he traced the history of the changes in interpretation of the Sherman law between 1895 and the present time. The thought running through the address of Mr. Frederick P. Fish, former president of the American Telephone and Telegraph Company, was that research should precede legislation. Mr. Henry R. Towne, president of the Yale and Towne Manufacturing Company, and former president of the Merchants' Association of New York City, and Mr. Guy E. Tripp, chairman of the Board of Directors of the Westinghouse Electric Manufacturing Company, dealt, in different forms, with an analysis of the present proposed anti-trust legislation. These speakers were followed by Professor Henry R. Seager, of Columbia University, of New York City, who held closely to a discussion of the proposed interstate trade commission, its scope, its possibilities, both favorable and dangerous. The closing address of this symposium on anti-trust legislation was delivered by Mr. Louis D. Brandeis, of Boston.

The annual banquet was held on the evening of February 12th, and was attended by 370 delegates, guests and ladies. Two speeches were delivered, one by Secretary Redfield, of the Department of Commerce, and the other by Professor Doctor Karl Rathgen, of Hamburg, Germany. Secretary Redfield's address was largely confined to a review of the activities and broadening scope of the Department of Commerce, while the remarks of Professor Rathgen drew marked attention to the caution with which Germany is proceeding, in the matter of control of corporations and, by implication, the necessity for caution in this country.

The sixth and seventh sessions were devoted largely to the discussion of the maintenance of resale prices and to the reports of committees on fire waste and vocational education.

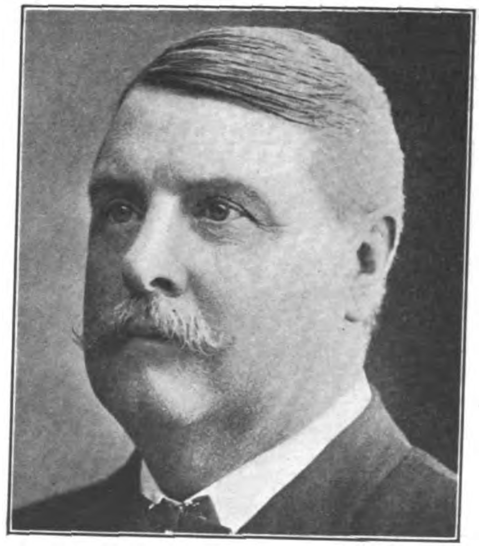
Two new vice-presidents were elected, namely, A. H. Mulliken, president of the Pettibone-Mulliken Company of Chicago, and Robert F. Maddox, of Atlanta, Ga.

THE VALUE OF THE EXPRESS COMPANIES' SERVICE

A few months ago, at the time of the inception of the parcels post, the criticism against the express companies was so general and so virulent as to make it appear that the vast service which these companies had been so efficiently rendering for many years, could be readily disposed of by a more extended employment of the parcels post.

More recently, however, business has begun to realize that the general "baiting" of express companies is not only unwarranted by facts, but that the service which they have and are performing, is indispensable and is being seriously threatened by some restrictive measures already enacted and others of a more radical tendency now under consideration. The article which we publish elsewhere in this issue by William A. Marble, president of the Merchants' Association of New York, is well worth the serious consideration of all those who are interested in protecting the efficiency of our present important arteries of trade. Mr. Marble argues in favor of the indispensable value of the express service and opposes at the present time the further extension of the parcels post system. As Mr. Marble points out, there are certain services performed by express companies which would be impossible to attempt by the parcel post and to wantonly destroy such service would constitute an inexcusable blunder on the part of the Government, to say nothing of the actual injury which would be done to the general public, to the express companies and to the investors in express company securities. The following editorial taken from a recent issue of *Leslie's Weekly*, is of particular interest in this connection:

> Are the public quite ready for some of the revolutionary propositions now being discussed in high circles in Washington? Are the people prepared to pay the tremendous bills for the exploitation of experimental schemes on the part of those who have never yet achieved a record in the world of business and finance, and whose ambitions have lain wholly in the realm of politics?
>
> Is this Government so efficiently managed that it is to be trusted by the people with all of its public utilities, including the express business, the telephones, and telegraphs? We do not believe so. What a billion dollar Congress would do with such an opportunity to spend the people's money defies the imagination to depict. We have just begun to experiment with the parcels post. We are told that it is a great success. That remains to be seen. We call the attention of shippers to the fact that their interests are at stake in this matter more than those of any other class.
>
> It is interesting to recall just what the express companies of this country have been doing for so many years. As far back as a quarter of a century ago, in a decision of the United States Supreme Court, one of its eminent judges paid this tribute to the express business of the United States: "It has become a public necessity, and ranks in importance with the mails and with the telegraph. It is used in almost every conceivable way and for almost every conceivable purpose by the people and by the Government. All have become accustomed to it, and it cannot be taken away without breaking up many of the long-settled habits of business and interfering materially with the convenience of social life." This is a remarkable statement, but the history of the express business abundantly justifies it, and now more than ever before.
>
> What have the express companies done for the producer and the shipper? They were among the first to suggest the possibility of raising fruits, berries and vegetables and of shipping them to meet the public demand. They did the work of the pioneer in encouraging production and in bringing the consumer and producer in closer contact by carrying freight on fast trains, assuring a uniformity of moderate rates and giving to perishable goods a market that could not otherwise have been had. Special cars for horses and carriages, refrigerator cars for perishable products, large end-door cars for automobiles and



WILLIAM A. MARBLE.
President of the Merchants' Association of New York.

"SAFETY TRUNKS" BEING FILLED WITH FRAGILE PACKAGES FOR TRANSMISSION BY EXPRESS. THE PARCEL POST HAS NO SUCH PRECAUTION.

aeroplanes, a through service from coast to coast without a moment's delay to tranship, travelers' checks (good in every land), personal service for the traveler abroad or at home, and expedited service for the shipper in any emergency—these are some of the achievements of the express companies which the public may not fully recognize, but which stand to their everlasting credit.

We doubt very much whether, with the knowledge of these facts, the people of this country are prepared to see the express companies driven out of business. And we have still graver doubts whether any service rendered by Government employes can ever be as uniformly satisfactory and as reasonable to the shippers, and to the public generally, as that which now obtains under the efficient management, which all the world concedes to the express companies of the United States.

Nobody claims that these companies are without their faults. There is no such thing as 100 per cent efficiency in any line of business, but with the knowledge of the loose, unbusinesslike and extravagant methods which prevail so often in governmental service, the public has come to know and believe in the superior methods of the efficiently managed corporation.

WAGON SHOWING THE "PICK-UP" SERVICE OF THE EXPRESS COMPANIES. THE PARCEL POST HAS NO PICK-UP SERVICE.

So much, at least, is due to the express companies of the United States.

The Merchants' Association of New York, of which Mr. Marble is president, has also memorialized Congress in behalf of the preservation of the service performed by the express companies. The following, which appears in their official organ of March second, outlines the reasons why this organization considers it necessary to take this action:

After a careful inquiry into the situation, the Association found that the extension of the parcels post service threatens to drive the express companies out of business. The extinction of their service would be a serious loss to merchants, as it performs functions which the parcels post does not and probably cannot perform.

ABOLITION WOULD CRIPPLE BUSINESS.

The Merchants' Association took the lead in the movement which led to the reorganization of the express service and the revision and reduction of express rates. The orders issued by the Interstate Commerce Commission have made this service efficient and the charges reasonable. Its abolition would seriously cripple the business of shippers.

Having given the matter the most careful consideration, the Board of Directors of the Association at its last meeting decided to appeal to Congress. It adopted resolutions briefly setting forth the situation and supplemented them by a memorial in which the service performed by the parcels post and that of the express companies is discussed and contrasted.

DIRECTORS TAKE ACTION.

The resolutions adopted by the directors were as follows:

"WHEREAS, The Postmaster General is empowered by law at his discretion to determine the weight limit of parcels which may be transmitted by mail, to make regulations relating thereto and to fix and change the rates therefor, and

"WHEREAS, The parcels post, although useful and desirable within its present limits, is by reason of numerous limitations unfitted effectively to meet all the needs of commerce for quick transportation, and

"WHEREAS, The express service fully provides for those needs in a highly efficient manner and at rates fairly proportioned to the cost of rendering the service, and

"WHEREAS, The extension of the parcels post weight limit to 100 pounds would so deplete the volume of traffic available to the express companies as to make their operation profitless and force their retirement;

"*Resolved*, That in the opinion of this Board, the express service is an indispensable agency for quick transportation, whose continuance is imperatively required by the needs of commerce, that the parcels post as at present organized, would be a wholly inadequate substitute, inferior in many respects to express service; that it is lacking in many important features essential to a complete service, and being unadapted to many classes of traffic, its substitution would leave that traffic unprovided for;

"*Resolved*, That if the parcels post be so expanded as to cover the entire field of quick transportation it cannot in any event perform that function more efficiently or economically than it is now performed by the express companies and in all likelihood the cost will be greater;

"*Resolved*, That in the opinion of this Board no social or economic benefit will result from substituting the parcels post for the express service beyond the limits now established, but that on the contrary serious harm to the country's traffic facilities will ensue with a probable loss resulting from the parcels post's operations, to be borne by the public treasury;

"*Resolved*, That the further extension of the parcels post be opposed by this Association and that the reasons for such opposition be stated in full in a proper memorial to Congress."

The memorial which the Board directed to be prepared is signed by Mr. W. A. Marble as president of the Association, and it has been sent to every member of Congress.

CORRECTING A MISLEADING STATEMENT

It will be remembered that in the RAILWAY WORLD of November attention was called to a statement made by Clifford Thorne, chairman of the Iowa Railroad Commission, and given wide publicity, to the effect that the railways of the United States could be purchased by the Government for approximately $14,000,000,000 and that Government bonds to that amount could be issued at a rate that would require an annual interest charge of only $420,000,000, or three per cent. President Ripley, of the Atchison, took vigorous exception to this estimate of Commissioner Thorne's and in two open letters, which were also published in the RAILWAY WORLD, clearly showed how misleading were the figures employed by this gentleman as were his conclusions drawn therefrom. It is of interest to note that Charles A. Prouty, who was formerly chairman of the Interstate Commerce Commission, and has now charge of its valuation work, in a recent address at Cleveland in which he vigorously opposed Government ownership, made a statement to the effect that the probable cost to the Government in the event of their purchase of our railways would be about $20,000,000,000, on which the interest charges would be likely to be about $600,000,000. Mr. Prouty employed an interest rate of three per cent, which was the same as that used by Mr. Thorne, but even on this extremely doubtful assumption that the Government could sell bonds in such vast amounts at such a low rate of interest, there is a wide difference between their figures. As a matter of fact, it is highly improbable that the Government could dispose of such bonds at a rate below three and one half per cent.

Mr. Prouty's figures were, of course, intended only as a rough estimate of the valuation of the railways, but it is recognized that perhaps no other Government official is better able to make such an estimate, and it is at least significant that he had sufficient confidence in its approximate accuracy to employ it in his argument against railway nationalization. It is also of interest to know that his valuation figures were the same as those employed by President Ripley in his reply to Commissioner Thorne, while his interest figures are much nearer those of Mr. Ripley's than of the Iowa Commissioner's.

Mr. Prouty is evidently not the only high official connected with the Interstate Commerce Commission who is at the present time, opposed to Government ownership. Chairman Clark, of that Commission, in an address last month before the Traffic Club of Philadelphia, was also quoted as opposed to Government ownership largely on account of the fact that experiments along these lines have not always proved satisfactory in foreign countries.

THE RESPONSIBILITY FOR RAIL FAILURES

A few months ago, owing to the numerous rail failures which had occurred in various sections of the country often causing wrecks of a disastrous character, press criticism of the railways became unusually severe and it was stated on more than one occasion that the load being put upon the rails was too severe for safe operation. It was also stated, —and in this criticism there was a disagreeable undertone, that in the interests of economy and in order to make rails last longer, the railroads were ordering those of such extreme hardness and brittleness as to often invite the breakage so frequently reported. Recent investigations, however, would seem to largely discredit such criticism and to indicate that the blame for such failures rested largely in imperfect manufacture, rather than in either the weight of the load or the quality of the rail. In other words, rail failures in a number of instances lately have been found accompanied by transverse fissures which have apparently been the cause of such breakages, and while James E. Howard, engineer physicist of the Interstate Commerce Commission, has, in a number of investigations, reached the conclusion that these fissures were the result of overloading the rails, railroad officials have generally disagreed with such conclusions, and an extensive investigation recently conducted by Doctor Dudley which is published in the *Railway Age Gazette* of February 27th. appears to conclusively show that fissures are the result of imperfect manufacture rather than the strain put upon the rails. In brief, the conclusions reached by Doctor Dudley are that internal transverse fissures in rails are created primarily by careless and defective mill practice. Furthermore, a more recent report of Mr. Howard would tend to support these conclusions, as in his report on the wreck on the Southern Railway near Oyama, N. C., he makes the significant statement that although it was necessary to remove eighteen rails, only the one in which the internal fissures was found was broken and the rest were twisted and bent without breaking. It would appear from the foregoing that the responsibility for this dangerous type of failure is at last being placed where it belongs, namely, upon the shoulders of the manufacturers.

MISLEADING PRESS REPORTS

It is unfortunate that so much information of a misleading character is published in the daily press with reference to the cases which are constantly coming before the Commission or the courts relative to various allowances which it has been the practice of carriers to allow for services performed in the transportation of freight. Many of these cases are of a purely technical character and the railroads themselves often take the initiative in requesting the Commission to decide whether such allowances are legal under the interstate commerce law.

It is well within the truth to state that rebating, in its objectionable sense, has practically disappeared from railway operations and yet, with regard to many of these cases it is made to appear that the carriers are constantly resorting to these objectionable practices. A recent decision by the Interstate Commerce Commission in which the Pennsylvania Railroad was involved, led a number of newspapers to either ignorantly or maliciously report this road as having been found guilty of resorting to secret rebates.

Such an interpretation of the Commission's decision is far from the truth as is indicated by the following statement authorized on January 28th, by Samuel Rea, president of the Pennsylvania Railroad Company:

> It should be clearly understood by the public that the decision of the Interstate Commerce Commission published to-day concerning allowances to short lines of railroad serving industries, does not contain any suggestion that the practices detailed therein constituted secret rebates.
>
> The rates covering the allowances by the railroads to these short industrial lines have been published and on file with the Interstate Commerce Commission, and were and are, therefore, a matter of public record.
>
> The Commission itself, in the full opinion, makes this statement:
>
> "It is proper to say that the whole matter was voluntarily brought to our attention by certain of these industries and the line railways which serve them.
>
> "The demands of plant railways for larger allowances, the increasing number of industries that were incorporating railroad companies to take over the operation of their plant tracks and locomotives with a view to demanding allowances, and the growing volume of complaint against the discriminations arising out of these relations between the line carriers and the industries so favored, together with certain formal and informal rulings by the Commission in other cases, had combined to raise a doubt on the part of the carriers and the industries as to the legality of these allowances and free service."
>
> The entire situation was laid before the Commission by the railroads and industries involved three years ago, no method of solving the peculiarly complicated questions involved having been worked out by the carriers and the industries, who had for many years previously recognized that a more definite and systematic treatment of the whole problem was necessary.
>
> In the briefs filed on this subject on behalf of the Pennsylvania, the New York Central, the Baltimore and Ohio, and the Erie Railroad systems, the following suggestion was made by the railroads themselves:
>
> "The payment of any allowance for the performance of this service inevitably creates suspicion, gives rise to complaints, and the only way to effectually deal with the problem is to abolish all allowances for the performance of this ser-

vice either by the industry itself, or the industrial railroad."

There was no secrecy about any phase of the subject. The effort of all concerned was solely to obtain the assistance of the Commission in removing an honest doubt on the part of the railroads and the industries affected as to the proper policy to be pursued.

THE SITUATION IN TEXAS

For a number of years the railway situation in Texas has been far from satisfactory. Regulation has been of an unusually severe and restrictive character and while public sentiment during the past two years has largely swung over to the side of the carriers, those in authority appear reluctant to adopt policies which would have a truly stimulating and progressive effect. Notwithstanding the fact that during 1913, Texas stood second in new mileage constructed with a total of 424 miles, this vast area which represents an empire within itself, is far from being adequately supplied with railway facilities, with the result that its vast natural resources remain practically undeveloped and its business and commercial opportunities are being abnormally restricted. This is strikingly indicated by the statement that during 1913, six counties of the State got their first railroad, while there are still twenty-seven counties with a combined area of 32,000 square miles without a single mile. In other words, Texas has an area equivalent in size to that of the State of Indiana in which the whistle of the locomotive has never been heard.

The general managers of the railroads of Texas, realizing in a way the public cannot, the restrictive influence of this lack of development, have recently published the following statement as an advertisement in the daily papers of general circulation throughout the State. It constitutes a straightforward appeal for fair treatment and should assuredly meet with the sympathy and support of the people of that great State whose own interests and prosperity are so closely associated with those of the carriers:

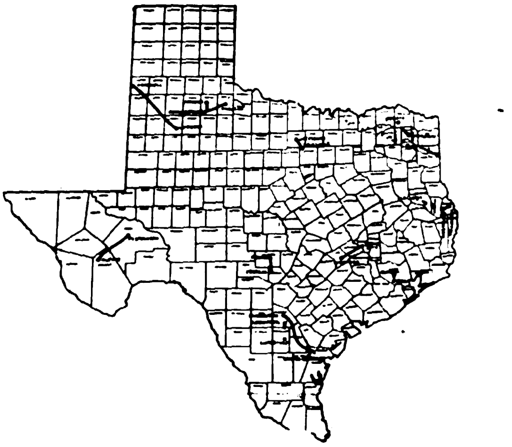
To the People of Texas.

President Woodrow Wilson, in his message to the Congress of the United States, on January 20, 1914, said: "The country is ready to accept and accepts with relief, as well as approval, a law which will confer upon the Interstate Commerce Commission, the power to superintend and regulate the financial operations by which railroads are henceforth to be supplied with the money they need for their proper development to meet the rapidly growing requirements of the country for increased and improved facilities of transportation. We can not postpone action in this matter without leaving the railroads exposed to many serious handicaps and hazards; and the prosperity of the railroads and the prosperity of the country are inseparably connected."

President Wilson, with his wonderful fund of information and keen foresight so characteristic of the man, sees the necessity for the railroads of the country to be supplied with more money, which they need and must have for their proper development, and in order to meet the growing requirements of the country for increased and improved facilities of transportation, and he further recognizes the fact that the country cannot prosper unless the railroads are permitted to enjoy a reasonable degree of prosperity, for he says: "The prosperity of the railroads and the prosperity of the country are inseparably connected."

While the President evidently favors a law which will empower the Interstate Commerce Commission to enable the railroads to obtain necessary funds for their proper and efficient operation, the Texas railroads are not in a position to await action by Congress. Besides, such action by the National Government is not necessary in this State. You have provided a railroad commission, and conferred upon it the powers, so far as Texas is concerned, that President Wilson thinks ought to be conferred upon the Interstate Commerce Commission, regarding the United States as a whole. Besides, there are a great many people who believe that the regulation of our internal affairs should be confined to the State and not conferred upon the National Government. This presupposes, of course, that the servants whom the people have elected to office will act promptly as occasion arise; otherwise action by the Federal Government will become imperative.

It costs a great sum of money to operate the railroads of Texas, and inasmuch as you annually pay all of the expenses of operating the railroads, you are entitled to know whether the railroads



Map of Texas, Showing New Mileage Constructed in 1913.

are collecting more than is just and reasonable under the circumstances.

Under the law, the railroads are entitled to collect enough to pay all operating expenses, taxes, etc., and in addition thereto, a fair return on the value of the property devoted to public use. Your tax commission, created by you, and acting under their oaths of office, has found that the true value of the railroads of Texas is $30,000 per mile. We believe they are of greater value. According to Table No. 10, page 400 of the Twenty-first Annual Report of the Railroad Commission for the year 1912, the total cost of the construction and equipment of the Texas railroads up to June 30, 1912, was $582,388,949,99, which shows that the roads have cost their owners a little over $38,000 per mile. But, taking $30,000 per mile, which the tax board says is the true value of the roads, as a basis, the railroads of this State, for the year ending June 30, 1910, earned 4.30 per cent on that value. For the year ending June 30, 1911, they earned 4.16 per cent; for the year ending June 30, 1912, they earned 3.97 per cent. Out of these earnings the companies must pay the interest on their bonds and other indebtedness and if it is not sufficient, they are forced to borrow the money, or default in interest payments. For the year ending June 30, 1912, the shortage amounted to a little over three and a quarter million dollars, and for the year ending June 30, 1913, the shortage amounted to something over one million six hundred thousand dollars. And for the first five months of the year beginning July 1, 1913, the railroads are over four million dollars behind what they were at the end of the corresponding five months of the year beginning July 1, 1912, so that if they break even for the balance of the year, their deficit for the year ending June 30, 1914, will be nearly six million dollars. However, they cannot hope to break even, because the month of December with its disastrous floods and loss of business has not yet been taken into account.

We are anxious to continue to give the people at least as good service as heretofore; in fact, we want to improve that service, but it is apparent that we cannot do so unless we can obtain more money from the operation of the roads. We have reduced operating expenses all we can. Further reductions of expenses must come, if at all, by the help of the people, the Legislature, the courts and the juries. The crisis has been reached where we must have more money, or else be unable to give the people adequate, safe and reasonable service. Poor service naturally gives rise to bitter complaints, and as your servants, we believe you are entitled to know the truth of the situation with which we are confronted.

Former Interstate Commerce Commissioner Prouty, now at the head of the railroad valuation department of that body, recently said.

"The railroad is a public servant. That phrase comes to us from the Supreme Court and has been for a quarter of a century in the mouth of everybody who has to do with this subject. It comes, as time goes on, to take on a different meaning. Originally, the people said: 'The railroad is our servant, therefore we can kick the railroad and cuff the railroad ad libitum.' It is coming to be understood, gentlemen, that just as your servant can only properly discharge his duties when he is suitably fed, suitably clothed, and siutably housed, so the railroad can only properly discharge its duties when it receives proper treatment from the public. It is coming to be apprehended that in the final analysis, the public pays the bill and that it pays for us, as railroad commissioners, to accord to the railroad just and fair treatment. That, I say, is not only demanded by justice—it is demanded by public interest."

Former Interstate Commerce Commissioner Franklin K. Lane, now a member of President Wilson's Cabinet, said:

"The railroad is our common high-road; it is not a luxury; it is not a concern in which the farmer and the manufacturer alone is interested; it is an essential to the commercial life of our people, almost as necessary as the land itself, for we have grown up as a people to be physically dependent upon our railroads. No other people are so bound up as we are in economic interdependence. No one community in all this land live to itself. We have grown as railroads are built. We have made a community of a continent."

Ex-President Theodore Roosevelt recently said: "The great need of the hour, from the standpoint of the general public—of the producer, consumer and shipper alike—is the need for better transportation facilities, for additional tracks, additional terminals and improvements in the actual handling of the railroads, and all this with the least possible delay. Ample, safe and rapid transportation facilities are even more necessary than cheap transportation. The prime need is for the investment of money which will provide better terminal facilities, additional tracks and a greater number of cars and locomotives, while at the same time securing, if possible, better wages and shorter hours for the employes. There must be just and reasonable regulation of rates, but any arbitrary and unthinking movement to cut them down may be equivalent to putting a complete stop to the effort to provide better transportation."

The State having taken over the regulation of the railroads and the fixing of rates is under both legal and moral obligations to discharge that duty so as to enable the railroads to earn a fair return on the value of their property, and give to the public the best and safest transportation service possible. This is all we ask, and we submit that the railroads and the public are justly entitled thereto.

PUBLIC UTTERANCES BY PROMINENT OFFICIALS

A number of Government and railway officials were active during January and February in giving public expressions of their views on various phases of the railway problem. One of the most important utterances by a public official was that by Charles A. Prouty, before the Annual Convention of the Chamber of Commerce of the United States, held in Washington in January on "Railway Valuation." This is reproduced in full in another section of this issue. Ivy L. Lee, executive assistant to the president of the Pennsylvania Railroad, also delivered a number of addresses in various sections of the country, one of which, entitled "The Burden of Unnecessary Legislation," is also presented at length in another section. The new president of the

FAIRFAX HARRISON.
President, Southern Railway.

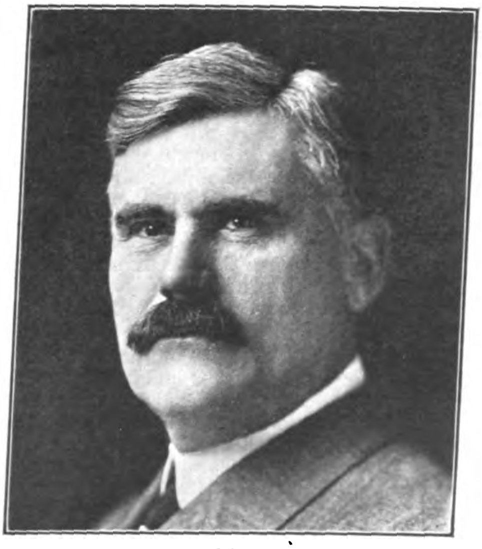
Southern Railway, Fairfax Harrison, spoke at the annual banquet of the Chamber of Commerce, Chattanooga, Tenn., on January 20th, on "The Southern Railway in Its Relation to the People of the South." He clearly indicated how intimately the prosperity of this great system and that of the people of the South were intertwined, referring particularly to the vast expenditures of money involved in the payment of salaries, construction work, the purchase of new material, taxes, dividend and interest requirements. In closing his address, Mr. Harrison said:

> I am humbly grateful for the welcome the South has given me to my new opportunity for its service. It has been such a welcome as you have given me to-night, cordial and with every evidence of good will. My hope is to justify this to those who allow me their confidence, who are willing to believe that if we sometimes fail it will not be through lack of good intention or desire to do our duty as we conceive it. I have no sense of personal elation in the realization to-day of an ambition cherished ever since I entered the service of the Southern Railway Company seventeen years ago. I feel most a sobering sense of a heavy responsibility, but I do not fear the event. I have served under two great men, Samuel Spencer and William Wilson Finley, both men of action, eager to accomplish, conscious always of the imperious summons of to-day, and of the warning of Ecclesiastes: "Whatsoever thy hand findeth to do, do it with thy might." I have known that before all they were patriotic men, faithful to the South, and with their example and their ideals before me my hope now is so to carry on their work as to gain the kind of public esteem they earned and to aid in building for the future, as they built, not only the Southern Railway but the South itself. In this high endeavor I am one of you, my fellow countrymen, who are similarly engaged, and I appeal to you as co-workers for aid and co-operation.

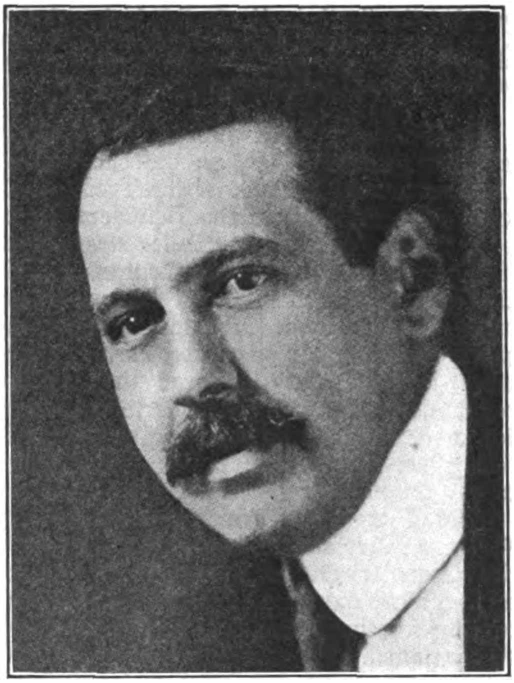
On February 17th, Judge Prouty made another public address on the occasion of the first annual banquet of the Traffic Club of Baltimore, held in the Belvidere Hotel of that city. He laid particular stress upon the imminent danger of bankrutpcy for all the railroads of the United States, unless means were provided for giving the companies more money or greater earning powers. Judge Prouty declared that as the public compelled the railroads to pay more for modern facilities and to give more efficient service, so the public would have to pay the bills.

J. M. Fitzgerald, former president of the Western Maryland Railroad, also addressed the banqueters and among other things stated that more money would have to be forthcoming for the railroads if progress was to be continued. He said in part:

> It is becoming rather difficult to say anything new about the railroad situation in this country. Since their officers began to discuss the affairs of the railways in public a great many of them have been talking a great deal with very good result. The public in general is coming to understand railway problems and the railway men themselves are coming to understand them better than they did before. The public has learned a good deal and the officers of the railways are learning a good deal. I believe that the railway officers are coming to feel that the people of this country are inclined to give the railways a square deal. It is



J. F. HOLDEN.
Vice-President, Kansas City Southern Ry.



J. M. FITZGERALD.
Former President, Western Maryland Railway.

evident that the marauders, grafters and tricksters are being eliminated from the railway world, and, on the other hand, there is some indication that the people are beginning to recognize the falsity of many of the statements recklessly made by politicians who seek to curry popular favor by denouncing the railways.

If this is the situation it augurs well for the coming era of peace and good will. The railways are here and the public is here. We have to get along together. Because of the discussion of recent years we are getting along better together and as all people come to understand all aspects of what is called the transportation problem we will get along still better together.

We are all servants of the public and the public is ourselves. The railways have nearly 2,000,000 employes, and from the presidents to the trackmen they are just as much part of the public as are the farmers, the miners and those who work in the mills and factories, shops and stores. We are working for one another and with one another. Therefore it is not exactly a matter of master and servant, in the sense that there could not be industry and commerce as we now know it without the co-operation of all of those engaged.

I think you will agree with me that the railways are performing a greater amount of service in proportion to their resources than either the agricultural or manufacturing industries and are receiving a lower proportionate return for that service. It goes without saying that this condition cannot continue. If this country is to receive the railway service which it needs, the railways must be allowed the means which will enable them to perform that service. This statement holds good with the railways under the present regime of corporate ownership and administration. It will hold good even if at some future time the proprietary interest and the administration of the railways be taken over by the Government.

CONGRESS FAILS TO COMPENSATE RAILROADS FOR PARCEL POST

Congress has again failed to do justice to the railways by passing the bill providing for the expenditures of the Postoffice Department for the next fiscal year without making any provision to compensate the railroads for carrying the parcels post. This, in spite of the fact that the bill is based upon estimates of the Postoffice Department that next year the parcels post will handle 600,000,000 packages yielding a revenue to the postoffice of $60,000,000.

In commenting upon this recent act of Congress, Ralph Peters, president of the Long Island Railroad Company and chairman of the Committee on Railway Mail Pay, has authorized the following statement:

The Postmaster General in his annual report of December 1, 1913, stated that in view of the prospective "prodigious growth" of the parcel post, "the railroads, of course, will become entitled to additional compensation for this extra service imposed upon them, and the Department is engaged in gathering all statistical data necessary for ascertaining a correct basis for fixing a just, fair, and adequate compensation for the service rendered."

On February 17th, the Railroads' Committee was advised by the Post Office Department that it had made a recommendation of Congress that "on account of the increased weight of mails" due to the parcel post, the Postmaster General should be authorized to add to the compensation of the railroads not more than one-half of one per cent.

This recommendation would have added only $254,000 to the mail pay of all the railroads in the United States.

Congress took no action on the recommendation evidently considering the proposal too trivial for consideration, and preferring to await the recommendation of the Joint Congressional Committee now investigating the whole subject.

In Great Britain the railways receive 55 per cent of the revenues from the parcel post. Before the establishment of the parcel post the railroads in this country received for transporting the mails at least one-fifth of the Post Office revenue. Assuming that their service is no greater in handling the parcel post than with other mail, this increased revenue of $60,000,000 to the Post Office Department should in all fairness mean increased payments to the railroads of at least $12,000,000.

Nevertheless, the appropriation bill passed by Congress provides no payment to the railroads beyond the provision already made that five per cent might be added to the pay of the railroads on which there had not been a weighing since January 1st, 1913.

At a time when the Interstate Commerce Commission is insisting that the railroads shall make a fair charge for every service rendered, it seems in the highest degree unjust that no provision should be made adequately to compensate the railroads for providing and operating the transportation machinery without which the mail service would be practically impossible.

THE GOVERNMENT'S RAILWAY VENTURE IN ALASKA

The Government, as represented by the National Congress, has at last definitely determined to begin railway construction on an extensive scale in Alaska. This is guaranteed by bills recently passed in both Houses in which provision has been made for the construction of a Government railroad or railroads in this territory at an authorized cost of $40,000,000, to be raised by an issue of three per cent, thirty-year bonds. In commenting on this proposed venture on the part of the Government, the St. Louis *Globe-Democrat* of February 24th, has the following to say, editorially:

"We are now on the eve of Government ownership of railways, or, at least, of one railway, which, when completed, will be a very great one. As contemplated, it is to be 1,000 miles in length, terminating at one, or perhaps two, of the Alaskan seaports, and penetrating into the interior of that vast country in directions to reach coal and other mineral deposits, timber, and other known and as yet unknown resources of that wonderful land. The original proposition was for issuing $40,000,000 in Government bonds, but both Houses of Congress have passed a bill appropriating between $35,000,000 and $40,000,000, to be paid from time to time out of current Government revenues. The bills differ in some other respects, but as they are identical in this one it will doubtless remain in the bill to be reported by the conference committee, will pass both Houses, and be signed by the President.

"The estimate of $35,000 a mile probably includes mileage only. The cost of equipment will be in addition. The heavy cost of constructing the line is due not only to engineering difficulties, but to the long distances it will be necessary to transport materials. Even should work be soon commenced, and prosecuted steadily during the part of each year when it can be done, it must be some years before the line will be complete. There are likely to be stoppages, for financial or other reasons. But the beginning of work, and the extension of the line 100 miles or more from tide water, will mark the beginning of an increase in population and the founding of new towns and the development of new industries."

THE GRADE CROSSING PROBLEM

There are many outside of railway circles who believe the carriers have not been dealt with fairly in connection with the elimination of grade crossings. In some instances, legislatures have passed laws, which has placed the entire cost of grade abolition upon the railways and, if literally interpreted, would practically bankrupt certain lines within a short period. No one is more anxious for the removal of such crossings than are the carriers. They are a continuous menace to human life and a drain upon resources, in that heavy damages are being constantly paid, owing to numerous accidents which occur at such places. It would be utterly unfair, however, for any State to assume an arbitrary attitude with regard to the immediate removal of such crossings or to insist that the entire cost should be met by the railways. In its issue of February 26th, the Philadelphia *Press* comments editorially on this problem, and its proper solution, in the following manner:

"The creation of grade crossings was probably inevitable and necessary in the early days of railroading. Their removal has now become a public question in most of the older States. Some of the railroads are eliminating the worst of them as rapidly as possible, a wise policy which the chief engineer of the Baltimore and Ohio Railroad urges all companies to adopt in order to 'halt the sentiment which is sweeping over the country for the elimination of grade crossings without proper thought of the great economic questions involved.'

"When legislatures take up the question they usually want to enforce an immediate and wholesale abolition of grade crossings, which would nearly bankrupt the railroads if insisted upon. Chief Engineer Stuart estimates that the sum of $350,000,000 would be necessary to remove all the grade crossings on the Baltimore and Ohio system, which is about half the capitalization of that company. The Pennsylvania Railroad Company recently published a statement that to eliminate all its grade crossings would cost it $600,000,000.

"It would of course be impracticable and unjust to insist on wholesale and immediate removals of grade crossings at such a cost to the railroads. The public treasury will have to share the expense of this public improvement, and it must be done gradually A settled railroad policy, as Chief Engineer Stuart recommends, of removing the worst crossings, those on the more important streets and roads where human life is always in peril because of the crossings, would so far meet the public craving for grade crossing removal that unreasonable demands for the total and immediate disappearance would probably not be insisted upon and if made would come with greatly diminished force.

"In this State the removal or regulation grade crossings is a matter left to the discretion of the new Public Utilities Commission. That is a new departure in this State, and a recognition of the fact that the grade crossings should go, but that their removal should be determined upon in a judicial spirit, with regard to the rights both of the railroads and the public. Improved roads, the automoible and electric cars on the highway have made the long-tolerated grade crossing impossible. The demand for their removal is as wide as the country. Their gradual abolition in a manner equitable to both the railroad and the public would be immensely promoted by the general acceptance by the railroads of Chief Engineer Stuart's advice, that the railroads voluntarily do even more than is required in the removal and safeguarding of grade crossings."

RAILROAD VALUATION

Commissioner Prouty's speech on Railroad Valuation before the annual meeting of the Chamber of Commerce of the United States, held in Washington during the early part of February, was received with great interest by the entire country, as it constituted the first official and comprehensive statement regarding the enormous task which the Government proposes to prosecute to a successful conclusion. Commenting editorially upon this address the *Financial America* of February 14th, has the following to say:

"Mr. Prouty, of the Interstate Commerce Commission, in his address last night at the second annual meeting of the Chamber of Commerce of the United States of America, presented the most comprehensive, public exposition of the work of railroad valuation yet made. His speech is a timely and important addition to the factors which to-day are clarifying the relations between the public and the rail carriers.

"In his discussion of the probable benefits of the work of appraisal, Commissioner Prouty takes a broad view which to us seems thoroughly justified. By his references to the benefit to accrue to the investor as 'incidental' he means, of course, the 'indirect' benefit, which often is as important as the direct.

"In railway investment the public has an immediate interest. Just in proportion as railway securities commend themselves to the investing public it is possible for the railways to obtain the money with which to make necessary improvements to their properties. Whatever benefits the credit of our railways; whatever gives to railway securities the investment quality with bank stocks and municipal bonds; whatever, in a word, takes from railroad stocks the speculative and uncertain element, indirectly reduces the cost of furnishing railway service and thereby inures to the benefit of the general public.

"Commissioner Prouty is right, therefore, in characterizing the greatest immediate value of the work as political. The state of the public mind towards our railways is such that specific information is absolutely necessary."

A TRIBUTE TO AMERICAN RAILWAY OFFICIALS

The recent appointment of Superintendent Henry W. Thornton of the Long Island Railroad to the general managership of the Great Eastern Railway of England, constitutes a high compliment to the efficiency and trustworthiness of American railway officials. Lord Claude Hamilton, chairman of the company, is quoted as saying that the dearth of proficient men in the British railway world made the choice of an American necessary to accomplish the work to be done. Mr. Thornton, who is only forty-two years old, is a graduate of the engineering department of the University of Pennsylvania and began at the foot of the ladder in the engineering service of the Pennsylvania Railroad, advancing step by step until he became superintendent of the Long Island.

Discussing the reasons given by the Chairman of the English company's Board of Directors, in which he admits that there are features connected with the British system which dulls the mental activity of employes, the Chicago *Record-Herald* says:

"As the system is one which sacrifices promotion on merit to promotion by seniority, working automatically, the result is readily explicable. However, the English newspapers criticise the admission of the directors that no sufficient effort had been made to keep in touch with the operating talent of the railroad.

"It is evident that what is called 'working up' has become, in actual practice, but a sort of 'shaking down.' And if, in addition to following a system so deadening to enthusiasm and initiative and so discouraging to ability, no effort is made to discover what ability may exist, the reason—and necessity—for importing outside talent becomes evident.

"The obvious remedy is pointed out by the London *Daily Mail,* which declares that, under a better system, Englishmen in other parts of the world have made good records. As the 'remedy' is one of wide application to many businesses, it may be quoted: 'To watch and bring forward able young men and make an end of the system that * * destroys initiative and the sense of responsibility and converts latent ability into an indifferent machine.' The results of an experiment with the product of a system that keeps such cardinal points in view will be watched with interest in both countries."

Contemporary Opinion

The Rehabilitation of the Missouri Pacific.

ONE of the most remarkable instances of recent years of the stimulating effect of great leadership is evidenced in the improvement which has occurred in the Missouri Pacific under the wise guidance of Benjamin F. Bush. The following editorial from the "Baltimore Sun" of February 1st, pays a glowing tribute to President Bush of which he may be justly proud:

"Three years ago the Missouri Pacific was the joke among Western railroads—its roadbed, rolling stock and train service regarded as about the worst in ten States. Financially and physically, it was almost a wreck, so much so that Governor Stubbs, of Kansas, threatened to secure an injunction prohibiting the operation of trains until the line was made safer for travelers. A complete change in management was imperative and while they were about it the owners searched the country for the best man available. They found him in Benjamin F. Bush, then president of the Western Maryland. How completely Mr. Bush has 'made good' is set forth in the current circular of Hambleton & Co., which presents a full and most interesting report of how the 7,000 miles of track have been 'lifted out of the mud,' a splendid train service put into effect and the line placed on a solid financial basis.

"Hambleton & Co. rightly consider this a remarkable achievement, and it is a fine example of what the new type of railroad executive can accomplish."

Irrelevant Testimony Consumes Time at Rate Advance Hearing.

CONSIDERABLE time has been consumed at the hearings before the Interstate Commerce Commission in connection with the proposed advance of five per cent in the freight rates of Eastern carriers, by the testimony of certain shippers who have evidently employed the occasion to bring to the attention of the Commission, what they considered inequalities in local rate conditions. In other words, individual rates have been complained of on account of their alleged competitive unfairness in spite of the fact that they have had nothing to do with the case under discussion. Attention is called to this by an editorial which appeared in the Pittsburgh "Dispatch" on February 4th, which states in part:

"The testimony of a Pittsburgher before the Interstate Commerce Commission, charging that rates made from the Greensburg district on coal shipped east is lower than on coal from the Pittsburgh district shipped the same direction and, therefore, an unjust discrimination, is pertinent for a hearing before the Commission providing the claim is well founded. But there is difficulty in seeing its relevance to the matter that was under consideration, namely, the application of the railroads for a five per cent increase in rates.

"The machinery of the law to prevent unjust advantages in rates between rival shippers is ample and undisputed, though it might be wished that it would show more promptitude in action. But to decide such an issue is a radically different issue from the question whether the regular rates are profitable or not."

Gratuitous Railway Service.

OWING to a statement made by Commissioner Harlan at the reopening of the Eastern rate case a few days ago, a lively discussion has occurred in the public press relative to the various allowances which are still being permitted certain industrial concerns for services performed but which really are a part of the function of transportation and as such should in some manner be provided for by the railroads. Commissioner Harlan also called attention to "other extensive services rendered by carriers without charge in addition to the rate which involved a further loss of the revenue to which the railroads are entitled." In commenting on this situation, the New York "Commercial" of February 5th, has the following to say:

"That question of gratuitous service by railroads to large shippers who have tracks and sidings of their own for the delivery of goods to main lines has been brought up again by Commissioner Harlan in the hearing on the application for an advance in rates, and has been extended to various other allowances which discriminate against the smaller shippers. After repeating what was said the other day about the operation of these spur tracks for industrial plants free of charge, or making a rebate for their use, at an estimated loss of not less than $15,000,000 a year in the Official Classification Territory, the Commissioner referred to 'other extensive services,' 'rendered by carriers without charge in addition to the rate,' involving further loss of the revenue to which the railroads are entitled. Among these is that of the 'so-called trap or ferry car' service, by means of which carriers collect and deliver traffic for large shippers at their own premises, saving to them the expense of cartage. Similar services by lighterage, drayage and by elevation is mentioned for which no direct charge is made.

"All these free services, in so far as they are for some shippers and not for others, unquestionably involve an unjust discrimination. This is all the worse in that it is done for large shippers and not for small ones. It may be said that the railroads can afford it on account of the large amount of traffic supplied by those for whom it is done, but in a quasi public service like that of railroad transportation, it is the very purpose of the law to prevent giving any such advantage to large shippers over small. So far as work is done without charge which shippers would otherwise have to do at their own expense, it is an obvious discrimination in service rendered, and it is in effect a rebate or a reduction of the rate for transportation. It is an evasion of the law which is no more to be justified than a direct violation.

"This is a lingering abuse quite apart from the rate question, and it should be corrected. It undoubtedly does in some cases detract from the revenues which the railroads ought to derive from their traffic without an advance in rates; but how much it is difficult to estimate. It may be ascertained with reference to particular lines or shipping places by close inquiry, and railroad managers would do well to facilitate the inquiry and furnish all the information they can. It is no advantage to them to perform this gratuitous service if the practice can be abandoned by all lines and for all shippers alike. It is for them to obtain all the revenue to which they are entitled for their service. It is a factor in determining the rates to be charged over their lines, and they should meet the Commission half way in determining how far it affects the need of an advance in rates."

Meeting of the Kansas City Traffic Club.

THE members of the traffic club of Kansas City were addressed on February 18th, by B. H. Meyer, of the Interstate Commerce Commission who is reported as advocating that the Commission be given the power to prescribe minimum rates, but as opposing the idea that that body should be required to approve railway securities. He said in part:

"Not the bond and stock issues of the railways, but their actual value is the proper measure of rates. The government should in some way furnish, for the benefit of investors, all the facts connected with such enterprise, but it should not compel the Interstate Commerce Commission to pass upon bonds and stocks. The facts concerning the bonds and stocks outstanding should be sufficient protection to investors.

"On the other hand, investors are likely to be misled should the Commission be forced to give its approval to stocks and bonds. This approval might be—and I know that it would be—construed as a government guaranty of the issue in question.

"I know of several instances in which the permit to issue stock given by the Wisconsin Public Utilities Commission was used almost as a State guaranty in the sale of stocks, and that without any misrepresentation, so far as I could discover.

"I object also to the plan to make the Commission fix the sales price of stocks. Supposing the price is 120 to-day and 150 to-morrow. The price might be just and legitimate, but what would the man who has to pay 150 say to the commission? I think that to regulate the sales of stocks and bonds in such fashion is approaching the problem from the wrong angle.

"I believe, however, that the public is entitled to a certain protection in its investments. It would be well to furnish it accurate information as to the amount of indebtedness outstanding against any concern which seeks to increase its capital. With such information the investor would know what he was doing, or should know.

"I believe also that no railway should be built and its stocks sold until there is a public necessity for it—until there is some one for it to serve and some prospects for its doing a profitable business. It would be proper for the Commission to have power to pass upon this phase of the matter and to require the Commission's permit before a railway is built or its stock sold.

"The Commission should have power to fix minimum transportation rates. Suppose boats were plying your river in such numbers as to create competition with the railways and the railways lowered their rates to drive the boats off the river. If the government forced the railways to continue to carry merchandise at the low rates and lose money, it would be an undesirable condition which nobody would care to see continued. On the other hand the boats would be gone. If they returned you would have the same condition to face. The Commission should have the power to fix a reasonable mimimum rate below which carriers would not be permitted to transport goods. Then the boats and the railways could go out and compete for business, offering service as an inducement."

Personal

Joseph Wood.

JOSEPH WOOD, who on February first, resigned his position as first vice-president of the Pennsylvania Lines, had been in the railway service fifty years, serving in each of the various departments. For the past five years he has been considering retiring from the active duties of railway management. Recently he suffered a great bereavement in the loss of his wife, who died suddenly, so that he felt it imperative that he give up his weighty responsibilities.

Mr. Wood will continue to serve as a director of the Pennsylvania Railroad Company, so that his associates will still enjoy the benefit of his counsel and ripe experience.

Mr. Wood was born at Haddonfield, N. J., on June 5, 1846. He was graduated as civil engineer from the Pennsylvania Polytechnic College in 1864, and entered the railway service in the autumn of the same year. Mr. Wood's first employment was as rodman on the construction corps building the Connecting Railway at Philadelphia. From 1867 to 1869 he was assistant engineer in the same service. In 1869 he became resident engineer of the Northern Central Railway.

Mr. Wood was appointed resident engineer of the Baltimore and Potomac Railroad, and engineer of the Northern Central Railway in May, 1872. In May, 1878, he was made assistant to the superintendent of motive power of the Pennsylvania Railroad at Altoona, Pa. In November, 1881, he became superintendent of motive power, and on November 1, 1887, he was appointed general superintendent of transportation of the Pennsylvania Company; the Pittsburgh, Cincinnati and St. Louis, and the Chicago, St. Louis and Pittsburgh Railroad companies. He was made general manager of the Lines West of Pittsburgh on March 1, 1890.

Mr. Wood was appointed fourth vice-president of the Lines West on January 15, 1896. On September 21, 1897, he became third vice-president, and on January 1, 1902, second vice-president. He succeeded Mr. James McCrea, on January 14, 1907, as first vice-president of the Lines West of Pittsburgh, and as president of the Vandalia and Grand Rapids and Indiana Railway companies.

James Jewett Turner.

JAMES JEWETT TURNER, who has been appointed first vice-president of the Pennsylvania Lines West, was born April 7, 1853, at Baltimore, Md. After leaving school he entered the service of the Pittsburgh, Cincinnati and St. Louis Railway, at Steubenville, Ohio, as ticket sorter, which position he occupied from February 15 to April 4, 1870. On the latter date he became connected with the Columbus, Chicago and Indiana Central Railway, working for the road at Richmond, Ind., as telegraph operator, train dispatcher and chief clerk to the superintendent.

On May 1, 1880, Mr. Turner was made superintendent of the Indianapolis and Vincennes Railroad, at Indianapolis, Ind., which position he occupied until October 10, 1885, when he became superintendent of the Eastern division of the Chicago, St. Louis and Pittsburgh Railroad, at Richmond, Ind. He held that post until April, 1888, leaving it to take over the superintendency of the Pittsburgh, Cincinnati and St. Louis Railway and its successor, the Pittsburgh, Cincinnati, Chicago and St. Louis Railway, at Pittsburgh, Pa. This position he held until January 15, 1896, when he was appointed vice-president and general manager of the Terre Haute and Indianapolis Railroad, Vandalia Line, with headquarters at St. Louis, Mo., where he remained until his election as fourth vice-president of the Pennsylvania Lines West of Pittsburgh, on June 7, 1901.

Six months later he was elected third vice-president, and on January 9, 1907, second vice-president. On February 1, 1914, Mr. Turner was elected first vice-president of the Pennsylvania Company and president of the Vandalia Railroad. Mr. Turner is an official of a number of the railroad companies affiliated with the Pennsylvania Lines West of Pittsburgh.

Edward Ballinger Taylor.

EDWARD B. TAYLOR, who has been appointed second vice-president of the Pennsylvania Lines West, was born on February 6, 1850, near Riverton, N. J. He was prepar-

JAMES J. TURNER.

EDWARD B. TAYLOR.

DANIEL T. MCCABE.

ed for college at the Westtown Boarding School, entered the sophomore class at Haverford College in 1866, graduating in 1869, and then entered the Polytechnic College of the State of Pennsylvania, where he was graduated with the degree of B. C. E., in 1870, receiving the Master's degree in 1873.

Immediately after finishing his course, he entered the service of the Pennsylvania Railroad, on July 25th, as clerk in the office of the superintendent of the Middle Division at Harrisburg, Pa. He became supervisor of Division No. 5 in September, 1871, and on March 1, 1872, he was appointed assistant engineer of the Middle Division, continuing in that office until January 1, 1875, when he was transferred to a similar position on the Pittsburgh Division.

On July 24, 1876, Mr. Taylor was made superintendent of the Lewistown Division, with headquarters at Lewistown, Pa., and remained there until January 1, 1879, when he was transferred to the superintendency of the West Penn Division. On September 1st he was transferred to the Lines West of Pittsburgh and made superintendent of the Pittsburgh, Cincinnati and St. Louis Railway. On April 1, 1888, he was promoted to the position of general superintendent of the Northwest System, becoming general superintendent of transportation of all lines West of Pittsburgh on March 1, 1890. He was elected a director and also fourth vice-president of the Pennsylvania Company and of the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company, on December 27, 1901, and third vice-president on January 9, 1907. On February 1, 1914, Mr. Taylor was elected second vice-president of the Pennsylvania Company and first vice-president of the Vandalia Railroad.

Mr. Taylor is also a director and president or vice-president of a large number of corporations forming or affiliated with the Pennsylvania Lines West of Pittsburgh. He is also connected with several financial institutions and is an active member of a number of engineering and scientific societies.

Daniel Trigg McCabe.

DANIEL T. McCABE, who has been appointed third vice-president of Pennsylvania Lines West, was born at Abington, Va., on November 25, 1849. He entered the railway service of the Pennsylvania Lines as clerk in the auditor's office of the Pittsburgh, Cincinnati and St. Louis Railway, in July, 1870.

In November, 1870, Mr. McCabe was promoted to claim clerk in the general freight office. In 1872 he became chief clerk of that office; from April, 1876, to April, 1883, he was division freight agent, in charge of the Second and Third divisions of the Columbus, Chicago and Indiana Railway, operated by the Pittsburgh, Cincinnati and St. Louis Railway, and from April, 1883, to April, 1884, he was general freight agent of the Chicago, St. Louis and Pittsburgh Railroad. Mr. McCabe served from April, 1884, to July, 1886, as general Western freight agent and division freight agent of the Second, Third and Fourth divisions of the same road, and from July, 1886, to October, 1890, he was assistant general freight agent of the Pittsburgh, Cincinnati and St. Louis Railway and Chicago, St. Louis and Pittsburgh Railroad. From October, 1890, to August, 1892, he was assistant general freight agent of The Pittsburgh, Cincinnati, Chicago and St. Louis Railway, and from August, 1892, to April 1, 1897, general freight agent.

On April 1, 1897, Mr. McCabe was made freight traffic manager of the Pennsylvania Lines West of Pittsburgh.

On January 9, 1907, Mr. McCabe was elected fourth vice-president of the Pennsylvania Lines West of Pittsburgh, and on January 14, 1907, he was elected vice-president of the Vandalia Railroad Company, in charge of the traffic department. Effective February 1, 1914, he was elected third vice-president of the Pennsylvania Lines West of Pittsburgh, and vice-president of the Vandalia Railroad Company, in charge of the traffic department.

George L. Peck.

GEORGE L. PECK, who has been appointed fourth vice-president of Pennsylvania Lines West, was born July 10, 1858, at Sandusky, Ohio. His railroad service began in 1873 as messenger boy on the Toledo division of the Pennsylvania Company. Mr. Peck's first promotion was to the position of telegraph operator, which he held from 1874 to 1876. From the latter date to 1881 he was train dispatcher in the service of the Pennsylvania Company. From 1881 to 1882 he held the same position on the Columbus, Hocking Valley and Toledo Railway.

In 1882 Mr. Peck was made trainmaster on the Toledo division of the Pennsylvania Company, and from 1894 to January 15, 1896, he was super-

GEORGE L. PECK.

ALFRED M. SCHOYER.

SAMUEL C. SCOTT.

intendent of the Richmond division of the Pittsburgh, Cincinnati, Chicago and St. Louis Railway. He held the position of superintendent of the Pittsburgh division of the same road from January 15, 1896, to January 1, 1901, when he was made general superintendent of the Southwest System of the Pennsylvania Lines West of Pittsburgh.

On June 7, 1901, Mr. Peck was promoted to the position of general manager of the Pennsylvania Lines West of Pittsburgh, and on January 1, 1913, he was elected fifth vice-president. He became fourth vice-president of the Pennsylvania Company and third vice-president of the Vandalia Railroad on February 1, 1914.

Mr. Peck is a member of the executive committee of the American Railway Association.

Alfred McGill Schoyer.

ALFRED M. SCHOYER, who has been appointed resident vice-president at Chicago of the Pennsylvania Lines West, was born in Allegheny, Pa., November 7, 1859. He is a descendant of two of Pittsburgh's oldest families, the Schoyers and the McGills, who emigrated to Pittsburgh late in the eighteenth century.

Mr. Schoyer was educated in private schools, and entered the railroad service as messenger, in the office of the Pennsylvania Company at Pittsburgh, May 1, 1872. From that date he filled the position of telegraph operator, train dispatcher, chief train dispatcher and division operator until January 1, 1892, when he was appointed superintendent of telegraph of the Pennsylvania Lines West of Pittsburgh. In 1903 his jurisdiction was extended over the Vandalia Railroad.

On November 1, 1889, Mr. Schoyer was appointed superintendent of the Eastern division of the Pennsylvania Company, and on January 1, 1902, he was made general superintendent of the Northwest System. On January 1, 1913, he was appointed general manager of the Vandalia Railroad, and on February 1, 1914, he was elected resident vice-president of the Pennsylvania Lines, with offices at Chicago.

Mr. Schoyer is a member of the Duquesne Club of Pittsburgh, the Union League Club of Chicago, and the St. Louis Club and Noonday West of Pittsburgh. In 1903 his juirisdiction was treasurer of the Chautauqua Institution, of Chautauqua, N. Y.

Samuel Church Scott.

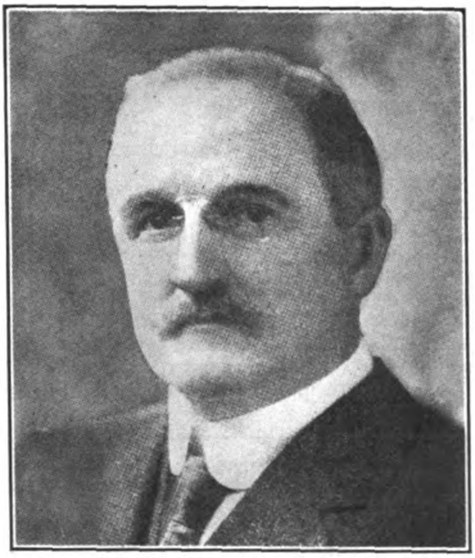
SAMUEL CHURCH SCOTT, who has been appointed vice-president's assistant of the Pennsylvania Lines West, was born on April 4, 1854, at Toledo, Ohio, and after leaving school entered the service of the Pittsburgh and Connellsville Railroad, in 1872. Two years later he became connected with the Pennsylvania Railroad, leaving the service in 1875. In the fall of 1876 he matriculated at the Homœopathic Medical College, Philadelphia, graduating in 1878. After practicing medicine four years, Mr. Scott again entered railroad service in September, 1882, when he became clerk in the office of the manager of the Pittsburgh, Cincinnati and St. Louis Railroad.

On October 18, 1885, he became chief clerk to the general manager of the Pennsylvania Lines West of Pittsburgh; two years later, chief clerk to the fourth vice-president and general manager. On March 1, 1890, Mr. Scott became chief clerk to the second vice-president, and on April 23, 1891, chief clerk to the first vice-president. He served nearly eleven years in that capacity, and on January 1, 1902, was made assistant to the first vice-president of the Pennsylvania Lines West.

On January 1, 1905, Mr. Scott was made assistant to the president of the Vandalia Railroad, and on April 7th, of the same year, assistant to the president of the Grand Rapids and Indiana Railway Company. On September 10, 1906, he was elected vice-president of the Cleveland, Akron and Columbus Railway Company, now the Cleveland, Akron and Cincinnati Railway Company. On February 1, 1914, he was appointed vice-president's assistant.

William R. Scott.

WILLIAM R. SCOTT, who on February 1st, became vice-president of the Pacific System of the Southern Pacific Company with headquarters at San Francisco, Cal., was born in 1860. He was educated in the public schools and entered railway service in 1881, since which time he has been consecutively to July 12, 1884, locomotive fireman, Atchison, Topeka & Santa Fe Railway; July 12, 1884 to July 1, 1891, locomotive engineer; July 1, 1891 to August 15, 1898, traveling engineer, same road; August 15, 1898 to June 1, 1900, trainmaster, Northern Division, Gulf, Colorado & Santa Fe Railway; June 1, 1900 to March 1, 1901, division superintendent, same road at Cleburne, Texas; March 1, 1901 to July, 1903, general superintendent, Fort Worth & Denver City Railway; September to November, 1903, assistant superintendent, Sacramento division, Southern Pacific Company; November, 1903 to June 1, 1905, superintendent, Salt Lake Division, same company; June 1, 1905 to September, 1, 1907, superintendent, Western Division, same company; September 1, 1907, to November 1, 1907, general superintendent; November 1, 1907 to July 15, 1912, assistant general manager; July 15, 1912 to February 1, 1914, general manager.



E. E. Calvin.

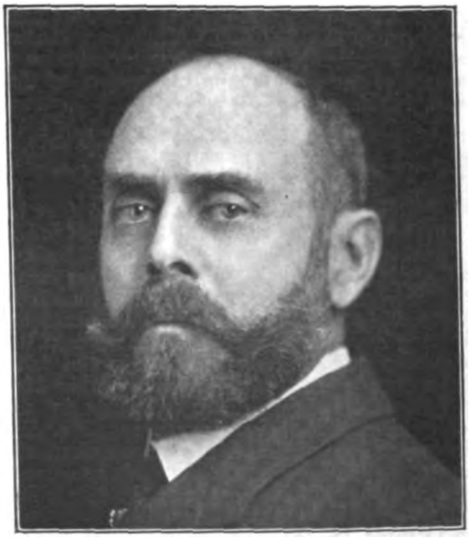
E. E. CALVIN, vice-president of the Southern Pacific Company at San Francisco, Cal., has been appointed vice-president and general manager of the Oregon Short Line Railroad, with office at Salt Lake City, Utah, effective February 1, 1914. He succeeds W. H. Bancroft, whose resignation was announced recently. Mr. Calvin was born October 16, 1858, in Indianapolis, Ind. He began his railroad career in 1873 and for two years was telegraph operator for the Indianapolis, Cincinnati and Lafayette Railway. He then went back to school for a year. From April, 1877, to March, 1882, he was telegraph operator and station agent for the Union Pacific Railroad. From then until June 1, 1887, he held the positions of train dispatcher, conductor and trainmaster. June 1, 1887, he was made division superintendent of the Missouri Pacific Railway. On February 22, 1891, he accepted service with the Oregon Short Line Railroad, as superintendent of the Idaho division, remaining in that capacity until 1895. He then became general superintendent of the International and Great Northern Railway, with headquarters at Tyler, Tex., but in March, 1897, he returned to the Oregon Short Line as general superintendent, with headquarters at Salt Lake City, Utah. From May 15, 1903, until April 1, 1904, he was assistant general manager of the Oregon Short Line. Mr. Calvin went to Portland in 1904 to take charge of the Oregon-Washington Railroad and Navigation Company, as vice-president and general manager of the road. Until July 15, 1912, he was general manager of the Southern Pacific Company with headquarters in San Francisco. He was then made vice-president in general charge of construction and operation, the position he left February 1 to accept the general managership of the Oregon Short Line.

A. B. Newell.

A. B. NEWELL who has been elected president of the Toledo Terminal Railroad Company, entered railway service with the Lake Shore and Michigan Southern Railway in July, 1890. In November, 1891, he was appointed superintendent of the Kalamazoo division of this road. In May, 1892, superintendent of the Jamestown-Franklin division and in February, 1893, superintendent of the Western division. In 1901 he became president and general manager of the White Pass and Yukon road, and in 1906, left the railway service to engage in the railway business. In 1908, he became superintendent of the Mexican Central Railroad and in 1909, president of the Tennessee Central Railroad, which position he held at the time of his election.

Charles S. Churchill.

CHARLES S. CHURCHILL, who on March first, was appointed assistant to the president of the Norfolk and Western Railway Company, began his railway career in 1879 as a supervisor in railway construction working in Connecticut and Pennsylvania, in the latter State assisting in the construction of what is now a portion of the Bessemer and Lake Erie Railroad. In 1881, he became division engineer of construction of the Pittsburgh and Lake Erie Railroad, and in 1884 was appointed principal assistant engineer of the Schuylkill division of the Pennsylvania Railroad. In 1887 he accepted a position as engineer of maintenance of way of the Shenandoah Valley Railroad and in 1888 was appointed to a similar position on the Norfolk and Western. In 1903, he became chief engineer of the Norfolk and Western, which position he held until his recent appointment. Mr. Churchill has also filled terms as vice-president and director of the American Society of Civil Engineers. He is a member of the Institution of Civil Engineers and of the Advisory Committee of the American Association for Testing Materials. Last March he completed a term as president of the American Railway Engineering Association.



CHARLES S. CHURCHILL.

P. M. Ripley.

P. M. RIPLEY, who has recently been appointed assistant to the president of the El Paso and Southwestern System, entered railway service as axeman for the Illinois Central at Chicago in 1902. Since then he has been consecutively employed as chainman, draughtsman and instrumentman for the Chicago and Alton and the Atchison, Topeka and Santa Fe. In 1904, he became clerk in the local freight office of the Atchison, Topeka and Santa Fe at Chicago, and in 1906 filled successively the positions of clerk in the statistician's office, tariff clerk and rate clerk in the general freight office of the same road. In 1908, he became traffic manager for Phelps, Dodge and Company, of New York, and in 1902 accepted the position of assistant general traffic manager of the El Paso and Southwestern Company. In November, 1912, he became chief clerk to the vice-president in charge of all departments, which position he held until his recent appointment.

J. H. White.

J. H. WHITE, who has been appointed assistant to the president of the Chicago, Indianapolis and Louisville Railway, graduated from Harvard University in 1906, and in July of the same year, entered the railway service as rodman in the engineering department of the Grand Trunk Pacific Railway. He served in the engineering, mechanical, transportation and purchasing departments of this road and of the Grand Trunk until September, 1908, when he accepted the position as chief clerk to the assistant to the president of the Wabash Railroad. In June, 1911, he was appointed special inspector reports to the president, and in March, 1913, became general fuel inspector of that road. He held this position until his recent appointment.

E. D. Levy.

E. D. LEVY, who, on March 1, became general manager of the St. Louis and San Francisco Railroad, was born in Paris, Texas, October 16, 1879. He first entered railway service as stenographer in office of manager of the Santa Fe Refrigerator Dispatch, Chicago, Illinois, February 1, 1898, serving as stenographer to the assistant superintendent of motive power and equipment, Michigan Central Railway, Detroit, Michigan; stenographer in the office of the general superintendent of the Chicago, Milwaukee and St. Paul Railway, Chicago, Illinois. Secretary to the industrial commissioner of the Atchison, Topeka and Santa Fe Railway, Chicago, Illinois, and entered the service of Mr. W. C. Nixon, then superintendent of the Chicago division of the Atchison, Topeka and Santa Fe Railway, Chicago, Illinois, on August 8, 1898, as Mr. Nixon's secretary, and has been with Mr. Nixon practically ever since with the exception of two periods when he left his employ for a short time. When first leaving Mr. Nixon, in March, 1899, he was stenographer in the office of the master mechanic of the Atchison, Topeka and Santa Fe Coast Lines at Needles, California. Stenographer in office of the master mechanic of the Ft. W. & D. C. Railway, Fort Worth, Texas. Stenographer in the office of the vice-president and general manager of the Mexican Central Railway, City of Mexico; re-entering Mr Nixon's service when he was general superintendent at Galveston, as Mr. Nixon's secretary, January 26, 1900, and leaving on July 1, 1900, and working as secretary to the superintendent of the Kansas City Southern Railway, Texarkana, Ark., and chief clerk to the trainmaster of the Kansas City Southern Railway, same place; re-entering Mr. Nixon's service as stenographer in his office, December 15, 1900, serving as file clerk and later as his secretary. When Mr. Nixon was promoted to general manager of the G. C. & S. F. Railway, Galveston, Texas, in February, 1902, was made transportation clerk in the office of the general manager. He was promoted to senior clerk, general manager's office, April 30, 1903, and on May 1, 1904, promoted to chief clerk to F. G. Pettibone, general superintendent, G. C. & S. F. Railway, which position he held until August 15, 1906, when he came to the St. Louis and San Francisco Railway as assistant superintendent of car

E. D. LEVY.

service. He was made superintendent of transportation on June 1, 1907, and appointed assistant general manager May 1, 19111.

Thomas Benton Hamilton.

THOMAS BENTON HAMILTON, who has been recently appointed general manager of the Vandalia Railroad, was born in 1865, and graduated from Princeton University in 1888. He entered railway service in 1888 as rodman of the Jeffersonville, Madison and Indianapolis Railway at Louisville, Ky., since which he has been consecutively, January 27, 1890, to January 1, 1896, assistant on engineers corps Pittsburgh division, Pittsburgh, Cincinnati and St. Louis Railway; January 1, 1896, to May 1, 1897, assistant engineer Pittsburgh division, Pittsburgh, Cincinnati, Chicago and St. Louis Railway; May 1, 1897, to April 1, 1898, engineer maintenance of way, Toledo division, Pennsylvania Company; April 1, 1898, to April 1 1900, engineer maintenance of way, Cincinnati division, Pittsburgh, Cincinnati, Chicago and St. Louis Railway; April 1, 1900, to June 1, 1901, engineer maintenance of way, Cleveland and Pittsburgh division, Pennsylvania Company; June 1, 1901, to December 21, 1903, superintendent, Erie and Ashtabula division, same company; December 21, 1903, to January 1, 1912, superintendent Cleveland and Pittsburgh division, same company; January 1, 1912, to date, general superintendent, Central System of the Pennsylvania Lines West of Pittsburgh, which is operated by the Pennsylvania Company.

THOMAS B. HAMILTON.

M. Riddle.

M. RIDDLE, who has been appointed general manager of the Florida East Coast Railway began his railway career with the Norfolk and Western in 1887 in the general engineering department. In 1890 he entered the service of the Atlantic Coast Line Railroad as roadmaster, was made superintendent in 1900 and assistant chief engineer in 1904. He became general superintendent in 1905 which position he held at the time he became general manager.

F. S. Wynn.

F. S. WYNN, who, on February first, was promoted to be secretary of the Southern Railway Company, with office at 30 Church street, New York, vice R. D. Lankford, deceased, was born in Danville, Va. He is thirty-four years of age. He entered the service of the Southern Railway Company in April, 1900, in the law department at Washington. Later he served as secretary and also as chief clerk to the assistant to the president and vice-president. In January, 1909, he was made assistant secretary of the company, and in August, 1910, purchasing agent.

He graduated at Georgetown University school of law in 1906.

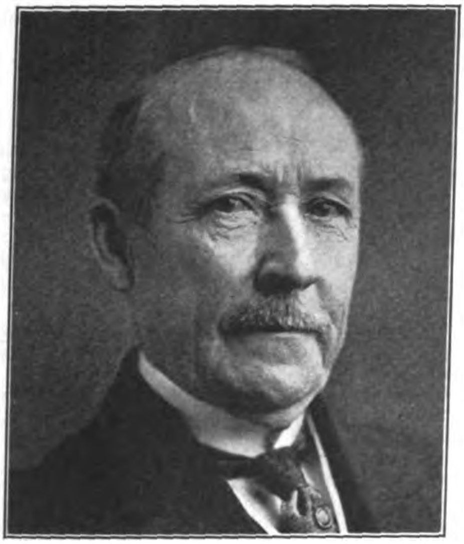
James T. Leary.

JAMES T. LEARY, until recently general auditor of the Baltimore and Ohio, has been appointed comptroller of the company to succeed the late Capt. Geo. W. Booth.

The new comptroller of the Baltimore and Ohio was born September 17, 1858, at Ithaca, N. Y. He is a graduate of Cornell University, of the Class of '80, having taken up a special course of scientific studies.

Mr. Leary first entered railway service with the Pennsylvania Company as a clerk in the mechanical department at Fort Wayne, Ind., in June, 1882. In May, 1883, he was promoted to the chief clerkship in the office of superintendent of motive power of the same company, and in November, 1899, was made chief clerk to the general superintendent motive power, of the Pennsylvania Lines West of Pittsburgh, with headquarters in that city.

He came to the Baltimore and Ohio in June, 1901, as assistant to the general manager, at Baltimore, and was advanced to general auditor in

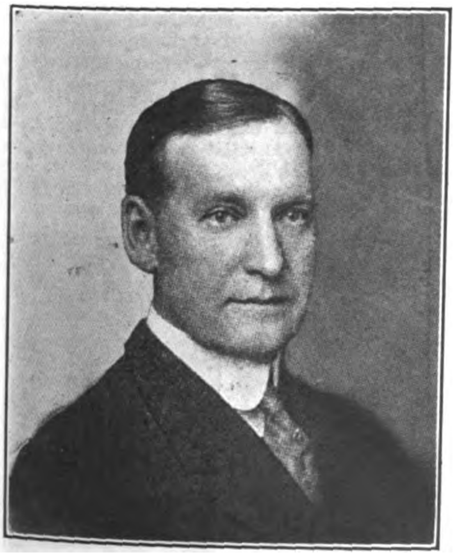


James T. Leary.

April, 1902, having held that position for the last twelve years.

Frank E. Otis.

FRANK E. OTIS, who has been appointed assistant general freight agent of the Chicago, Milwaukee and St. Paul, with headquarters at Minneapolis, Minn., was born February 2, 1869, at Beloit Wis. He graduated from high school at Hudson, Wis., in June, 1886, and began railway work March 1, 1887, with the Minnesota and Northwestern, now a part of the Chicago Great Western. In December, 1890, he became clerk to the commercial agent of the Chicago, Milwaukee and St. Paul at St. Paul, Minn., and in January, 1893, was transferred to Minneapolis, Minn. in a similar capacity. Two years later he was advanced to freight solicitor at Minneapolis and in the spring of 1897 was made chief clerk to the general Northwestern agent at that point. The following year Mr. Otis was made traveling freight agent and in September, 1900, was appointed commercial agent at Duluth, Minn. He was transferred to St. Paul in May, 1902, as commercial agent, where he remained until his recent promotion to the position of assistant general freight agent at Minneapolis, as above noted, having been in continuous service of the St. Paul for twenty-three years.



Frank E. Otis.

James P. Orr.

IN accordance with the pension rules of his company, James P. Orr, assistant freight traffic manager of the Pennsylvania Lines West, was retired on January 1st.

Mr. Orr's record with the Pennsylvania Lines was an enviable one. For eighteen years he held various clerical positions, while for more than thirty years he was an officer of the company.

James P. Orr.

In commenting on Mr. Orr's work as an officer, one high in the councils of the railroad said:

"Up to April 1, 1883, Mr. Orr occupied various positions with the Pennsylvanai Company, being appointed division freight agent on that date. His next promotion was to the position of general freight agent on April 1, 1897, which title he held until July 1, 1908, when he was appointed assistant freight traffic manager.

"During the thirty years as an officer, he has earned for himself, among both railroad and shipping interests, a reputation of which any man might justly be proud. His opinions and views, expressed always upon conservative lines and only after careful analysis and complete consideration of all phases of a question, have been received with the respect due to a man of unwavering honesty of purpose and have been looked upon as guideposts for rate structures that will long outlive his period of service. This is particularly true as to the enormous iron and steel and allied tonnage moving in the large territory under his jurisdiction."

C. I. Leiper.

C. I. LEIPER, who has been appointed superintendent of the Philadelphia, Baltimore and Washington Railroad, with headquarters at Cape Charles, Virginia, was born in Wallingford, Pa., October 28th, 1874. He graduated from Swarthmore College in 1895, after which he took a special course at the University of Pennsylvania.

Mr. Leiper entered the service as rodman in Jersey City in 1899. He went to Altoona as transitman on February 1, 1901, and March 15th was made assistant supervisor on the Maryland division. He was promoted to supervisor on the same division in 1903. Later he served as supervisor on the Pittsburgh division and the present Manhattan division.

Mr. Leiper was made division engineer of the Manhattan division August 15, 1909, and in 1911 he went to the New York division in the same capacity. He was promoted to be principal assistant engineer at Wilmington on June 6, 1913.

J. C. Auten.

J. C. AUTEN, who has been appointed principal assistant engineer, Philadelphia, Baltimore and Washington Railroad, was born August 31, 1870, at Montandon, Pa. He was educated at the Sunbury High School.

Mr. Auten was employed by the railroad in 1893 as rodman in the assistant engineer's office on the Sunbury and Shamokin division. On May 1, 1894, he was made acting assistant supervisor on the Philadelphia and Erie Railroad, and in November of that year he was promoted to supervisor. On October 1, 1898, he was transferred to the Baltimore division of the Northern Central Railway as supervisor, and in 1901 to the Middle division. He was promoted to assistant engineer of the Elmira and Canandaigua division in 1902, and later served in the same capacity on the Western Pennsylvania division, Eastern and Susquehanna division, and the West Jersey and Seashore Railroad. He was promoted to division engineer of the Maryland division on January 15, 1910, and on February 11, 1914, was appointed principal assistant engineer of the Philadelphia, Baltimore and Washington Railroad.

Robert V. Massey.

ROBERT V. MASSEY, who has recently been appointed superintendent of the maintenance division of the Pennsylvania Railroad, was born in Dover, Kent County, Del., September 29, 1871. He prepared for college at the "Hill School," at Pottstown Pa., and was graduated from the Sheffield Scientific School of Yale University, in 1892.

Mr. Massey entered the service of The Pennsylvania Railroad Company in the construction department, September 1, 1892, and remained in that department until August, 1895, whe he was transferred to the maintenance of way department, in the office of the principal assistant engineer at Altoona. He was appointed assistant supervisor at Freeport, Pa., November 1, 1895, and on April 1, 1897, transferred to Baltimore, Md., as assistant supervisor of the Baltimore division, Northern Central Railway. He was transferred to Mifflin, Pa., as assistant supervisor, Middle division, Pennsylvania Railroad, on April 1, 1899, and, on August 1st of the following year was advanced to supervisor of the Schuylkill division. In that capacity he was transferred to the Maryland division, Philadelphia, Baltimore and Washington Railroad, April 15, 1902, and to the Pittsburgh Yard, December 15, 1902.

On April 1, 1907, Mr. Massey was promoted to division engineer of the Schuylkill division. He was transferred to the New York division on January 1, 1909, and on March 7, 1911, he was promoted to superintendent of the New York, Philadelphia and Norfolk Railroad.

Charles Shalter Krick.

CHARLES S. KRICK, who has been appointed superintendent of the Philadelphia Terminal division of the Pennsylvania Railroad, was born at Reading, Pa., March 16, 1866. He graduated at Lafayette College in June, 1887. Mr. Krick entered the service of the Pennsylvania Railroad Company on July 11, 1887, as rodman in the assistant engineer's office, Schuylkill division, and was transferred to Altoona, April 14, 1890. He was appointed assistant supervisor of the Tyrone division on December 14, 1890, assistant supervisor of the Philadelphia

C. I. LEIPER.

J. C. AUTEN.

ROBERT V. MASSEY.

CHARLES S. KRICK.

division on April 1, 1892, and on May 16, 1895, he was made acting supervisor of the Schuylkill division being appointed supervisor on June 1, 1896. He was advanced to supervisor of the Middle division on June 14, 1897, and to the Pittsburgh division in the same capacity on January 1, 1900. On January 1, 1903, he was appointed assistant engineer of the Eastern and Susquehanna divisions, and on the Philadelphia Terminal division on August 20, 1903. On January 1, 1906, he was appointed principal assistant engineer of the Philadelphia, Baltimore and Washington Railroad.

Mr. Krick was promoted to superintendent of the New York Terminal division April 1, 1907. On January 1, 1912, he was appointed superintendent of the Manhattan division.

Mr. Krick's appointment as superintendent of the Philadelphia Terminal division became effective February 11, 1914.

Frederick Grant White.

FREDERICK GRANT WHITE, who has been appointed signal engineer of the Chicago Great Western, with office at Chicago, was born February 6, 1882, at Waterloo, Wis. He studied electrical engineering at the University of Wisconsin, completing a four-year course in 1905. In July of that year he began railway work with the Pennsylvania Lines West of Pittsburgh as signal repairman at Chicago, and in August, 1906, he was transferred to the Eastern division of the Pittsburgh, Ft. Wayne and Chicago at Rochester, Pa., as signal maintainer and repairman. From April, 1907, to May, 1908, he was assistant construction foreman on the same division at Alliance Ohio, and was then draftsman in the signal engineer's office at Pittsburgh, Pa., for one year. He left the Pennsylvania Lines in May, 1909, to go to the Northern Pacific as draftsman and designer in the signal department at St. Paul, Minn., for three months. He then became signal supervisor of the Chicago Great Western at St. Paul, in March, 1910; he was appointed assistant to the special signal engineer, and in November was made assistant signal engineer, resigning in July, 1912. The following three months he was with the Canadian Pacific at Montreal, Que., as valuation signal engineer, leaving that road to become signal inspector of the Great Northern at St. Paul, from which road he now returns to the Chicago Great Western as signal engineer, as above noted.

H. Bortin.

H. BORTIN, has resigned as engineer in charge of valuation of the Union Pacific Railroad and as member of its valuation committee, to accept the position of assistant to Thomas W. Hulme, general secretary of the President's Conference Committee in the valuation of the railroads in the United States, with headquarters at Philadelphia. Mr. Bortin, prior to entering the service of the Union Pacific has worked with the Isthmian Canal Commission in Panama for two and one-half years on municipal engineering, on the hydraulics of the Canal and in connection with the excavation work at Culebra.

E. P. Weatherly.

E. P. WEATHERLY, who has been appointed engineer of maintenance of way of the Kansas City Terminal Railway Company, was born near Salisbury, Mo., in 1877. He received an A. B. degree in 1897 from the University of Missouri, and in 1899 a B. S. degree in civil engineering. Mr. Weatherly entered railway service in the latter year as rodman for the Chicago, Burlington and Quincy Railroad at Hannibal, Mo., and in 1900, he was promoted to the position of resident engineer at Brookfield, Mo., from which position he was transferred again to Hannibal, Mo., in 1901. In 1903, he was promoted to division engineer at St. Joseph, Mo., and in 1909, became engineer of construction at Marion, Ill., in charge of extension to the Ohio River. On January 1, 1911, he left the services of the Burlington to become division engineer of the Kansas City Terminal Railway at Kansas City, Mo., which position he

E. P. WEATHERLY.

held until his recent promotion. Mr. Weatherly is a member of the American Society of Civil Engineers and of the American Railway Engineering Association.

John W. Meredith.

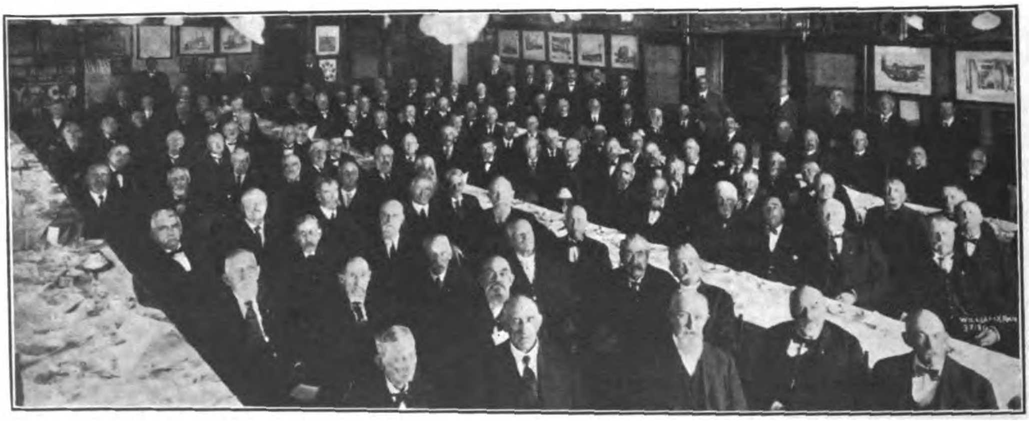
JOHN W. MEREDITH, who has been appointed general superintendent of the Central of New Jersey, with headquarters at New York, was born in March, 1862, at Maiden Creek, Pa., and was educated at the public schools and at Carroll Institute Reading. He began railway work as an extra station agent on the Philadelphia and Reading in 1885, and later in the same year entered the service of the Central of New Jersey, at Winslow Junction, N. J. He was agent at West End during the summer of 1886, becoming extra agent on the New Jersey Southern division of the same road the following winter. From 1887 to 1897, he was train despatcher at East Long Branch on the same division, and then for four years was trainmaster of that division. He was appointed superintendent in 1911, which position he held at the time of his recent appointment as general superintendent of the same road as above noted.

D. C. Rounesville.

D. C. ROUNSEVILLE, who has been appointed engineer of maintenance of the Chicago and Northwestern Lines east of the Missouri River, was born October 29, 1856, at Sheboygan, Wis. He was educated in public and private schools, and began railway work April 1, 1879, as chainman on location for the Milwaukee, Lake Shore and Western, now a part of the Chicago and North Western. The following April he went to the St. Paul and Eastern Grand Trunk as instrument man, and in September of that year returned to the Milwaukee, Lake Shore and Western as assistant engineer, which position he held until March, 1884. He was then for nine years locating and construction engineer, being promoted to division engineer in 1893. Two years later he was appointed assistant engineer of the Chicago and North Western, and in September, 1897, was made division engineer of the Ashland division, where he remained until March, 1906, when he was transferred to the Manitowoc, Green Bay and North Western as resident engineer. In April, 1907, he returned to the Ashland division as division engineer, and in March, 1909, was transferred to the Milwaukee, Sparta and North Western as resident engineer. Three years later he was made resident engineer of the St. Louis, Peoria and North Western also subsidairy to the Chicago and North Western at Pekin, Ill., from which position he is now promoted to engineer of maintenance, as above noted.

Pennsylvania Railroad Veterans.

THE following interesting photograph shows the veteran employes of the Pennsylvania Railroad being entertained at luncheon by the Pennsylvania Railroad Department of the Young Men's Christian Association on December 18, 1913. There were present 150 men whose ages ranged from sixty-five to ninety-three years. All of these men were veteran employes of the Pennsylvania Railroad Company, now retired and on the honor roll of the company. It is doubtful if 150 veterans of as fine a type and so high a character, whose life work had been performed under one employer, could be assembled elsewhere.



PENNSYLVANIA RAILROAD VETERANS AT ANNUAL BANQUET IN Y. M. C. A. QUARTERS, PHILADELPHIA. ONE HUNDRED AND FIFTY OF THESE MEN'S AGES RANGE FROM SIXTY-FIVE TO NINETY-THREE YEARS.

Obituary

E. F. Ackerman, assistant engineer of the Lehigh Valley at New York, died on December 26th at Johns Hopkins University hospital, Baltimore, Md. Mr. Ackerman entered the service of the Lehigh Valley on July 23, 1896, as a draughtsman and through steady promotion rose to be assistant engineer in June, 1902. He had charge of the construction of the Irvington branch, the preliminary service and the construction work of the Lehigh & Lake Erie Railroad, the Greenville & Hudson viaduct, the Hayes Creek, the Buck Mountain branches, the preliminary service, etc., of the Seneca Falls branch, the construction of the grain elevator at Communipaw, the Johnson Avenue yards in Jersey City and the Newark passenger station. For the past few months Mr. Ackerman has been in charge of work in connection with the company's Buffalo terminal improvements.

Joseph Boyd Baker, superintendent of the Philadelphia Terminal division of the Pennsylvania Railroad at West Philadelphia, Pa., died on February 3rd. He was born in August, 1853, and received his education at Lehigh University. He entered the service of the Pennsylvania Railroad in July, 1884, as a rodman at Altoona, Pa. He was made assistant supervisor at Lewistown in March, 1885, and held the same position subsequently on the Middle Division, the Maryland Division and the Pittsburgh Division, becoming supervisor of the Monongahela Division on March 6, 1889. He was transferred the following December as supervisor to the Philadelphia Division and in October, 1895, became assistant engineer of the Middle Division of the Philadelphia & Erie. He was transferred as assistant engineer in March, 1897, to the Pittsburgh Division, and was again transferred in the same capacity in January, 1899, to the Philadelphia Division. In February, 1902, he was appointed superintendent in charge of the Frederick Division; four months later he was made superintendent of the Cambria and Clearfield Division, and since November 1, 1902, he was superintendent of the Philadelphia Terminal Division.

William F. Berry, formerly vice-president of the Boston & Maine in charge of traffic, died on January 8th, at his home in Winchester, Mass. He was born on February 2, 1844, at Biddeford, Maine, and began railway work on May 1, 1864. He was consecutively station agent, freight and ticket clerk on the Eastern Railroad to May, 1866; then, for about six years, he was station agent. From April, 1872, to June, 1874, he was assistant general freight agent, becoming general freight agent on the latter date. On January 1, 1885, he was appointed assistant general freight agent of the Boston & Maine, the Eastern Railroad having become a part of that system. From March, 1889, to May, 1892, he was general freight and passenger agent of the Boston & Maine System, including all leased lines and branches; also general freight agent of the St. Johnsbury & Lake Champlain, and from February 1, 1892, also chairman of the executive committee of the Rome, Watertown & Ogdensburg Fast Freight Line. From May, 1892, to December, 1895, he was general traffic manager of the Boston & Maine. He was then made second vice-president, with authority over the traffic department. He was retired on June 1, 1913, after a service of almost fifty years with the Boston & Maine system.

Asa P. Blakslee, president and general manager of the Mauch Chunk Switchback Railway, died recently at his home in Mauch Chunk, Pa. Mr. Blakslee was born on November 13, 1854, at Mauch Chunk and began railway work in 1869, as telegraph messenger and ticket checker on the Lehigh Valley. From 1871 to 1873 he was waybill entry clerk, and later was made waybill examiner of the same road. He was the general freight and passenger agent of the Montrose Railway until it was absorbed by the Lehigh Valley. From February, 1878, to June, 1884, he was car accountant of the Lehigh Valley, and then became general car agent. He was in the real estate department of the same road from April, 1892, to January, 1899, and since March, 1899, had been successively superintendent, and president and general manager of the Mauch Chunk Switchback.

William Henry Boardman, for many years president of the "Railroad Gazette" (now the "Railway Age Gazette") and for eight years its editor, died at his home in Ridgefield, Conn., February 16th. He was born in Dixon, Ill., on August 3, 1846. His father owned and published the "Dixon Telegraph." It was in this office that Mr. Boardman first learned the many details of printing and publishing which stood him in good stead later. He was graduated from the University of Michigan in 1869. During the years that he was at the University he was employed during vacation times in the survey of the Great Lakes then being made by the War Department. After working for a time on his father's newspaper, Mr. Boardman was employed by the "Railroad Gazette," then published in Chicago. From that time and until early in 1911, when he became ill, Mr. Boardman gave his entire time to the affairs of what is now the Simmons-Boardman Publishing Co. At the time of the great Chicago fire, in 1871, he put the remaining assets of the "Railroad Gazette" in his bag and started for New York, where the work of publishing the paper was resumed. In 1878 he established a home in Franklin, now Nutley, N. J., and lived there for 22 years. He was active in politics, an officer in the town government, president of the school board, and an officer of several of the local social and sporting clubs. Later he moved to New York City and made his country home at Ridgefield, Conn. He was fond of outdoor sports. He was a member of the Century Club, the St. Andrew's Golf Club and the Camp Fire Club. On November 5, 1874, Mr. Boardman was married to Miss Henrietta Frances Hall, of Rutland, Vt., who survives him, as do also three sons, Francis, Dixon and Bradford, and two daughters, Mrs. Richard S. Chisholm and Miss Clara T. Boardman.

William A. Boehm, formerly traveling freight agent of the Minneapolis, St. Paul & Sault Ste. Marie Ry., at Cincinnati, Ohio, died at his home in that city, January 1st, aged 26 years.

George W. Booth, comptroller of the Baltimore & Ohio R. R., died suddenly at his home in Baltimore, Md., January 6th, aged 69 years.

Daniel Byrnes, attorney for the Minneapolis, St. Paul & Sault Ste. Marie Ry., at Chicago, died in that city January 25th, aged 50 years.

John W. Callahan, general manager of the Chicago Tunnel Company, died on February 13th at his home in Chicago, aged 51 years. Mr. Callahan formerly was trainmaster of the Belt Railway of Chicago, and subsequently was general manager of the Indiana Harbor Railroad.

George L. Carman, of Chicago, formerly superintendent of the Western Railway Weighing Association, died at Los Angeles, Cal., on February 11th. Mr. Carman was born September 7, 1838, in New York City. He entered railway service in March, 1855, and was consecutively train boy, Cleveland & Toledo; clerk in local freight office of the Mississippi & Missouri at Iowa City, Iowa; cashier in the local freight office of the Chicago, Rock Island & Pacific at Davenport, Iowa, until August, 1871, when he went to the Rock Island & Peoria and was successively general agent and general freight and ticket agent to February, 1875. From 1876 to 1879, he was division freight agent of the Rockford, Rock Island & St. Louis division of the Chicago, Burlington & Quincy. He was then for eight years commissioner for the Chicago, Burlington & Quincy and Wabash, St. Louis & Pacific pools, and of the Nortnwestern, Central Iowa and Davenport, Rock Island & Moline traffic associations. Subsequently, until 1904, he was superintendent of the Western Railway Weighing Association.

Walter M. Carroll, general storekeeper of the Chicago & North Western Ry., died at Chicago, February 11th, after an illness extending over several months. He was born at Hemlock Lake, N. Y., December 7, 1870. Mr. Carroll had been in the service of the Northwestern for 25 years. For a number of years he occupied the position as chief clerk to the vice-president and president, and later succeeded to the position of assistant storekeeper and general storekeeper.

Herbert DeWayne Carter, assistant freight traffic manager of the New York Central Lines East of Buffalo, N. Y., with office at New York City, died suddenly at Brooklyn, N. Y., on January 18th. He was born on October 16, 1860, at Watertown, N. Y., and was educated in the common schools of his native town. In 1873, he was a messenger of the Dominion Telegraph Company and from 1874 to 1875 was telegraph operator of the Montreal Telegraph Company at Watertown. He began railway work in 1875 as telegraph operator on the Rome, Watertown and Ogdensburg, now part of the New York Central and Hudson River; the next year he was made clerk in the general freight office of the same road, being appointed chief clerk in 1881. From July, 1888, to June, 1890, he was a clerk in the division freight office of the Philadelphia & Erie and the Northern Central, now part of the Pennsylvania Railroad, at Williamsport, and then after serving one year in the general freight office of the Philadelphia & Reading he was made assistant general freight and passenger agent of the Adirondack & St. Lawrence. From May, 1893, when the A. & S. L. was consolidated with the New York Central & Hudson River, until April, 1902, he was division freight agent and general agent of the passenger department of the New York Central & Hudson River at Herkimer, N. Y., and at Malone, and then to July, 1904, he was assistant general freight agent of the same road and the West Shore at New York, becoming general freight agent of the West Shore in July, 1904. He remained in that position until October, 1906, when he was made general freight agent of the New York Central & Hudson River, and in May, 1907, was promoted to assistant freight traffic manager of the New York Central Lines East of Buffalo.

H. D. CARTER.

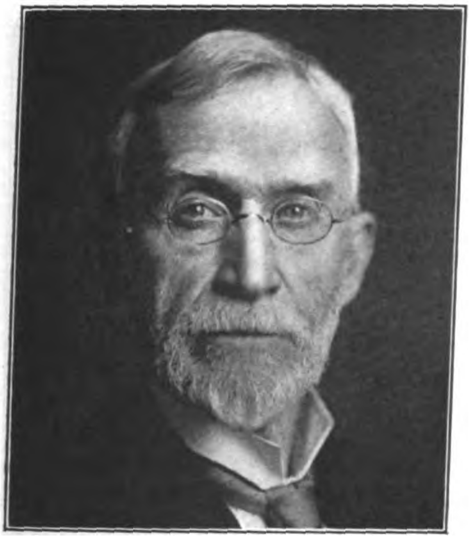
Edward W. Chadwick, superintendent of the Carolina Railroad, died at his home in Kinston, N. C., January 20th, at the age of 43.

W. A. Fowkes, traveling agent of the Pacific Fruit Express, with headquarters at Chicago, died suddenly at his home in that city, on January 15th, aged 44 years.

W. J. Gilmartin, superintendent of the Chihuahua Division of the Mexico Northwestern Railway, at Pearson, Mex., formerly assistant superintendent of the Buffalo & Susquehanna R. R., at Du Bois, Pa., is mentioned as one of those who met death in the Cumbre tunnel in Mexico.

Henry W. Griffith, assistant secretary of the Norfolk & Western, with headquarters at Philadelphia, Pa., died suddenly on January 15th, in New York City.

Edwin R. Holden, former coal sales agent and until 1899 a vice-president of the Delaware, Lackawanna & Western R. R., died February 13th at his home in New York, in his 78th year.



John P. Hess.

JOHN P. HESS, junior assistant superintendent of the relief department of the Baltimore and Ohio Railroad died in Baltimore, February 20th. He was connected with that department of the railroad for the last 32 years. Mr. Hess was born at Uvilla, Jefferson County, W. Va., July 7, 1849, and entered railway service with the Baltimore and Ohio, September 7, 1882, as clerk in the relief department. On September 17, 1888, he was advanced to acting chief clerk of the relief feature, and to chief clerk of the relief department April 1, 1889, having been promoted to junior assistant superintendent of the same department, May 1, 1909.

Being for so many years identified with the savings feature of the railroad, Mr. Hess's name became proverbial for lending a helping hand to many of the trainmen, engineers, shop employes and other railway men in Baltimore and Ohio employ and assisted them in acquiring their own homes. He knew personally most of those who operate the company's trains on its eastern lines and brought the savings feature to its highest standard of development, increasing its membership and popularity.

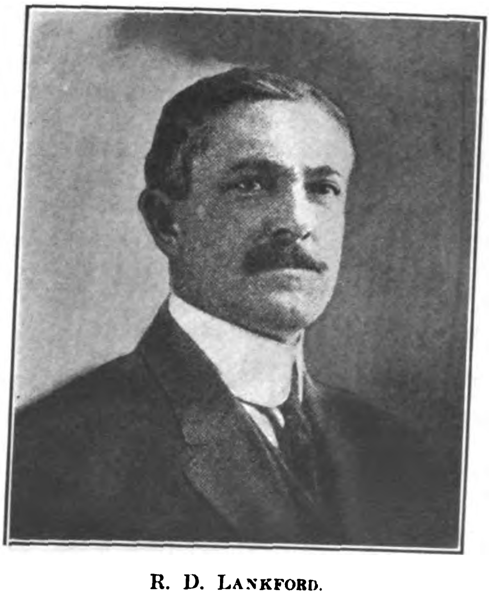
Cyrus V. Jaquith, retired counsel of the P. C. C. & St. L. R. R. died February 14th, at Atlantic City, N. J., at the age of 65 years. He was a well known railroad man, being for the past twenty years chief clerk in the legal department of the Big Four Railroad.

John H. Jones, formerly general coal freight agent of the Philadelphia & Reading Railway, died at his home in Germantown, Pa., February 4th, at the age of 76 years.

Newell S. Kimball, formerly for thirty years district master mechanic of the C. M. & St. P. Ry., at Green Bay, Wis., died in Chicago, at the age of 82 years.

W. B. Linsley, formerly superintendent of the Peninsular Division of the Chicago & North Western Ry., died at his home in Escanaba, Mich., January 10th. Mr. Linsley first went to Escanaba when the Chicago & North Western was extended to that point in 1868. He later became general manager of the road west of the Missouri River and then general superintendent of the entire system, but because of ill health about fifteen years ago returned to Escanaba to resume his earlier position.

Richard D. Lankford, vice-president and secretary of the Southern Railway, also of various subsidiary companies, with headquarters at New York, died on January 15th at his home in Brooklyn, N. Y. His death was due to the accidental turning on of illuminating gas in his bath room. While Mr. Lankford's duties were connected rather with the treasury department and the secretaryship than with the constructive work of rehabilitating the physical property and operation of the Southern Railway, his loyal devotion to the South, to the Southern Railway and to his company's interests made him deeply trusted and respected by his president and board of directors. He was one of those fine type of men who are never too busy to be courteous and who yet accomplish their own work and are always ready to help an associate or subordinate with their work. He was a man whom it was a privilege to have as a friend and one with whom it was a pleasure to do business. Mr. Lankford was born on February 28, 1867, in Somerset County, Maryland, and was educated at Washington High School, Princess Anne, Md. He began railway work on September 1, 1887, as clerk and acting auditor on the Maryland Central at Baltimore, Md., and from June, 1889, to February, 1892, was auditor and treasurer of the Roanoke & Southern, now a part of the Norfolk & Western. From March to December, 1892, he was in the accounting department of the Norfolk & Western. He went to the Southern Railway on June 1, 1894, as cashier, and had been in the employ of that road continuously ever since,



R. D. LANKFORD.

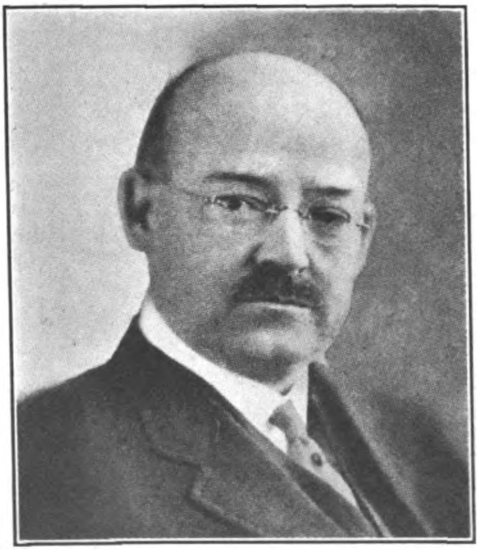
serving consecutively as assistant secretary, secretary and vice-president. He also held office in various subsidiary companies.

Denis Francis Maroney, aged 54, well-known railroad man and economist, died February 2nd, at his home in Arden, Washington County, Pa. He had served as general superintendent of the Pittsburgh Division of the Baltimore & Ohio R. R., president of the Pittsburgh, Shawmut & Northern R. R., president of the Mahoning & Brookville R. R. and president of the Uniontown & Wheeling Short Line. He was an extensive writer on financial and economic subjects.

J. B. Marshel, commercial agent of the C. M. & St. P. Ry., at Dallas, Texas, died suddenly in that city, February 8th, at the age of 70 years.

Albert W. Martin, formerly superintendent of the Boston Division of the New York, New Haven & Hartford, with headquarters at Boston, Mass., died on January 12th, in that city, at the age of 62. Mr. Martin had held various positions on the New Haven, including that of chief clerk to general manager at Boston, assistant general manager for the lines each of New Haven and as superintendent of the Boston Division, from which position he was pensioned about a year and a half ago. He had also held the position of manager of the Boston Terminal Company.

Harry Jerome Neff, general freight and passenger agent of the St. Louis, Brownsville & Mexico, with headquarters at Kingsville, Texas, died at Houston, Texas, January 9th, at the age of 35 years. Mr. Neff began railway work in September, 1897, with the Chicago, Burlington & Quincy in the local freight office at Aurora, Ill. Six years later he went to the St. Louis Southwestern and was successively rate clerk, traveling freight agent and local agent until April, 1908. He became connected with the St. Louis, Brownsville & Mexico in June, 1909, as commercial agent and in September, 1912, was appointed general freight and passenger agent.



CHARLES C. RILEY.

F. S. Savage.

"COLONEL" FRANK S. SAVAGE, advertising agent of the Atchison, Topeka and Santa Fe, died in Topeka on December 20th, in the Santa Fe Hospital. Mr. Savage was born in New York City in 1866. He went to Chicago twenty-three years ago to commence railroad service with the Chicago & Northwestern, resigning a few months later to enter the service of the Santa Fe in the office of the general advertising agent in Chicago.

After seven years of efficient work in Chicago, he was made advertising agent in Topeka, with jurisdiction over Kansas, reporting to General Passenger Agent Connell in Topeka and to General Advertising Agent Simpson in Chicago. At the time of his appointment most of the road's newspaper advertising bills were paid for in transportation, and in the issuing of these passes, Mr. Savage became acquainted with hundreds of newspapermen and he became one of the best known railroadmen in Kansas.

"Colonel" Savage—so named by newspapermen many years ago—was a man of likable traits, an agreeable companion and a sterling friend. His death is felt as a real loss by the many who knew him both in the service and in social life. He is survived by his widow and son Roger.

Sir Frank Ree, general manager of the London & Northwestern Railway of England, died in London on Tuesday of this week. He had been in the service of the company forty years, and general manager since 1909.

Charles C. Riley, general superintendent of transportation of the Baltimore & Ohio R. R., with headquarters at Baltimore, Md., died in Washington, D. C., January 6th, having been suddenly stricken with a hemorrhage of the brain. Mr. Riley was born October 1, 1864, and was educated at Butler University and Central College of Physicians and Surgeons at Indianapolis, Ind., 1880 to 1883. He entered railway service

July 1, 1883, as a clerk in the freight office of the Cincinnati, Indianapolis, St. Louis & Chicago Railway at Indianapolis. From April 17, 1897, to December 7, 1900, he was superintendent of car service and superintendent of transportation of the Baltimore & Ohio Southwestern R. R.; October 21, 1901, to July 6, 1903, car service agent of the Chicago Great Western R. R., and July, 1903, to September, 1904, superintendent of car service of the Erie Railroad. Mr. Riley was then superintendent of transportation of the Erie until November, 1911. He then became assistant to general manager of the Baltimore & Ohio R. R. and since May, 1912, has been general superintendent of transportation of the Baltimore & Ohio R. R., Baltimore & Ohio Southwestern R. R. and the Cincinnati, Hamilton & Dayton Railway.

L. C. Russell, traveling passenger agent of the Grand Trunk, with headquarters at Chicago, died in that city, February 5th.

B. A. Scofield, superintendent of terminals of the Mexico Northwestern Railway, at Cindad Juarez, Mexico, was one of those on board the ill-fated passenger train which was wrecked last week by Mexican bandits.

Neil W. Snow, former division superintendent and assistant to the general superintendent of the Michigan Central R. R., died suddenly in Detroit, January 10th, aged 39 years. Mr. Snow retired from railroad work about four years ago.

August C. Stonegrave, Canadian freight agent of the Central Vermont Ry., at Montreal, Que., died in St. Albans, Vt., February 7th, at the age of 71 years.

Clovis A. Talmadge, conductor of the Southern Railway at Macon, died February 12th, at his home in Macon, at the age of 46 years.

William Hickok Taylor, vice-president of the St. Louis Southwestern since 1907, also a director and a member of the executive committee of that road, and a director of several industrial corporations, died on February 7th, at his home in New York at the age of 56. Mr. Taylor was born in Brooklyn, N. Y., and graduated from Columbia College in 1880. He was a member of the University, Union League, Metropolitan and St. Anthony Clubs of New York, also of the Jekyll Island and Rumson Country Clubs.

June A. Wentz, formerly for many years general agent of the Chicago, Rock Island & Pacific at Chicago, died at his home in that city on January 11th, aged 72 years. Mr. Wentz was born at Binghamton, N. Y., and had been in railway service since 1858. His connection with the Rock Island began in 1880 as agent at Kansas City, Mo.

Samuel Woodward, former president and afterwards receiver of the Cincinnati & Eastern Railway, now a part of the Norfolk & Western Railway, and superintendent of the Ohio & Mississippi Railroad, now a part of the Baltimore & Ohio Southwestern R. R., died February 12th, at Morrow, Ohio, aged 74 years.

Memorial to the Late President Finley.

As a fitting memorial to the late President Finley and in recognition of his interest in agricultural education in the South, President Fairfax Harrison, of the Southern Railway, has addressed a letter to the heads of each of the nine State agricultural colleges in the South suggesting that the agricultural scholarships which President Finley inaugurated in the early part of 1912 be designated: "Southern Railway Scholarship: William Wilson Finley Foundation."

In inaugurating these scholarships, the late President Finley was following his policy of lending every practical aid in the agricultural development of the territory served by the Southern Railway and affiliated companies. Each young man accepting a scholarship must agree to engage in agricultural work, to teach agriculture, or to work on an experiment farm for at least three years in territory touched by one of the lines making the offer. The details as to the conditions under which the scholarships are awarded are in the hands of the college heads.

February Meeting of New York Railroad Club. —At the regular monthly meeting of the New York Railroad Club, held on the 20th ult., Dr. William Churchill, director of the optical laboratory of the Corning Glass Works, read a paper on "Signal Glass." Dr. Churchill discussed at considerable length the question of colors in signal glass. He pointed out that the introduction of green for the proceed indication and yellow for caution, has been followed by great improvement in colored lens, while the adoption of standards by the Railway Signal Association in 1908, has led to the general use of uniform colors. Quite recently the "transmission" quality of green glass has been improved thirty-five per cent. without sacrificing any distinctness of color. Dr. Churchill also reported a great improvement in the quality of glasses for lantern globes which has resulted in reducing by sixty per cent during the past ten years, the breakage of such globes by exposure to snow and rain. This same glass is also used for battery jars and chimneys.

The discussion of Dr. Churchill's paper was participated in by a number of those present in which it was pointed out by Mr. Rudd, signal engineer of the Pennsylvania, that officers of his road had been slow to adopt green for the night proceed color, because the yellow glasses thus far furnished have not been looked upon as entirely satisfactory. He thought, however, that the new yellow glass exhibited by Dr. Churchill would probably prove satisfactory. C. H. Morrison, signal engineer of the New York, New Haven and Hartford agreed with Mr. Rudd as to the hopeful prospect of finding green signals available for daylight service. The discussion was closed by Dr. Churchill who observed that extensive experiments would be needed to decide upon the most suitable size of lens and intensity of colors to meet the varied conditions which would be encountered in using lights to give indications in sunlight, on cloudy days and under all conditions. It was suggested that probably a ten-inch lens would be needed.

Charles A. Prouty on Railway Valuation

EDITOR'S NOTE.—This is the first official statement of the Director of the recently established Division of Valuation of the Interstate Commerce Commission, and was delivered at the Second Annual Meeting of the Chamber of Commerce of the United States, held in Washington, D. C., February 11 to 13, inclusive. It gives understanding of the task involved, the time required, the estimated expense and the motives that prompted the legislation.

I HAVE been asked to address you upon the valuation which the Interstate Commerce Commission is about making of the property of common carriers subject to its jurisdiction. That work has not sufficiently progressed so that its details could be either intelligently or profitably discussed, but there are certain general phases of the matter which will interest, and should be understood by, the members of your organization. Considered in that broad aspect, the subject naturally divides itself into three heads:

First. The thing to be done.

Second. The time and expense required.

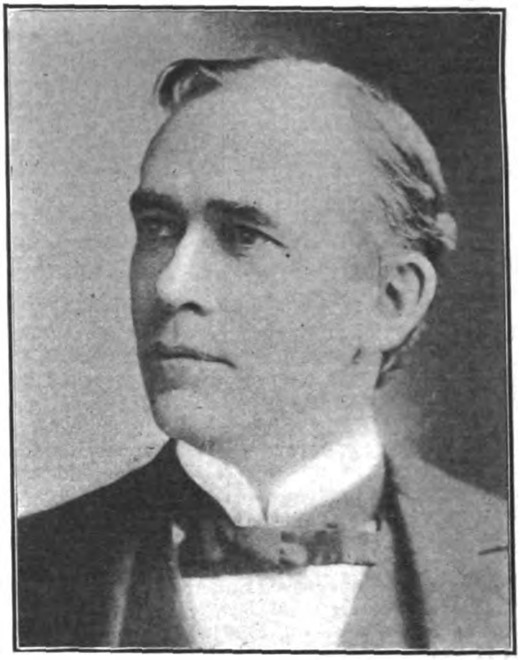
Third. The benefit to be derived.

THE THING TO BE DONE.

The Commission proceeds under a special Act of Congress of March 1, 1913. That Act, which was evidently drawn after much consideration and with great care, defines in detail the duty of the Commission and should be carefully read by everyone interested in the work. This act embraces the property of all common carriers subject to the jurisdiction of the Commission, but I shall speak to-night of railways alone.

By the terms of the Act the Commission is required to ascertain and report the cost of reproducing new the railroad and other property of every railway company in the United States, and the cost of reproduction less depreciation. Evidently, before it can be determined what it would cost to build a particular railroad as it to-day exists, we must know exactly where and what that railroad is. This means that as a preliminary to the work of valuation every railroad must furnish the Commission with maps and plans which will identify its property. Investigation shows that some few railroads in the United States have to-day such maps and plans; many railroads have maps and plans which contain a part of the information required but not the whole; while many others possess nothing of this sort worth naming. So far as these plans already exist, even though not in the most desirable form, they will be used; in so far as present maps can be added to and extended this may be done, but where no maps exist new ones must be prepared. When this work is completed, there will be found in the office of the Commission at Washington an accurate map and inventory of the property of every railroad engaged in interstate business as of June 30, 1914, together with other maps and plans showing all subsequent additions to the property. This of itself is a work of great magnitude which must be done by the carriers as a part of the general undertaking. You as business men will agree that while some expense will be entailed upon our railroads it will be to them well worth the cost.

When the Commission has been furnished with this complete inventory by a railroad it must proceed to verify it; that is, it must ascertain whether the facts stated in the inventory are true. It must determine the number of yards of earthwork, the number of yards of rock, the culverts, the tunnels, the bridges, together with the character and cost of construction. It has been decided that this information cannot properly be obtained without sending a surveying party over every mile of the railroad. Sometimes the progress of this party can be comparatively rapid; at other times it will be slow; at all times the work must proceed with sufficent care and detail to make certain that the figures obtained are correct. If this valuation is to serve its purpose it must be so made that it will not be open to just criticism. The general public must feel that the work has been properly and thoroughly done, and that the result is reliable. This would not be if any fact which could be accurately ascertained were guessed at.


HONORABLE CHARLES A. PROUTY,
Director of Physical Valuation.

It will be necessary to note in the course of these surveys and to determine in various other ways the amount of depreciation so that when the work is completed the records of the Commission will show the extent and character of the property of each of our railroads, the cost of rebuilding that railroad as it exists, and the amount of depreciation in the several articles which go into the railroad as well as in the railroad as a whole.

This is mainly an engineering task. The time and expense will be considerable; indeed, herein arises the major part of the outlay, but no serious difficulties are involved, nor should the result when ascertained be in serious doubt. It should be possible for the people of this country to know upon the completion of this work what it would cost to rebuild its railroads new and to what extent those properties have depreciated as compared to new.

This work is often referred to as a "physical valuation" of railways, and most people probably understand that this cost of reproduction, with or without depreciation, determines the value of the railway so that, having ascertained and reported these facts, the duty of the Commission has been discharged. But this is by no means true. Up to the present time the holding of the Supreme Court of the United States is that cost of reproduction new, or cost of reproduction less depreciation, are only factors entering into the final question of value. Many other things have been enumerated by that court as bearing upon the value of the property. The valuation act itself requires the Commission to ascertain and report the cost of construction, the amount of money which has been invested in the property, and the sources from which that money has been derived; to give, in short, a complete corporate and financial history of these properties; to take note of the earnings of the property, and having all these facts before it to determine from a just consideration what is the value of the property itself. I am not saying that it may not finally come to pass that the cost of reproduction will be the controlling factor; many people so insist. Others urge with equal earnestness that the true test of value, so far as it can be ascertained, is the money invested in the property. I express no opinion upon any of these propositions. I simply call your attention to the fact that the Commission is required not merely to ascertain the cost of reproduction, but to state the value of the property, and that in attempting to do so many delicate and difficult questions may be encountered. Let me instance one or two of these as illustrative.

The first railroad which the Commission is proceeding to survey in what is known as the Pacific District is the San Pedro, Los Angeles and Salt Lake, extending from San Pedro, California, to Salt Lake City, Utah, some eight hundred miles. Most of this road has been built in comparatively recent times, and the circumstances and cost of construction are fairly well known.

The course of the road is for the most part through an arid desert. A certain section of it, when built, was located where no man thought it could ever be disturbed by floods, yet shortly after it was opened for operation the floods came and carried out this portion. It was at once reconstructed upon a new location supposed to be beyond all possible danger from a recurrence of the previous disaster, nevertheless the waters again came and washed away this same section; whereupon it was rebuilt upon a third location, beyond all possible reach of future trouble from this source.

Considering the nature of the road and the people who were interested in its construction, it seems probable that due caution was exercised in the original location; that is, that a reasonably prudent man building this railroad as those men did, to be operated by them as a railroad, would have located it as it was located. It is undoubtedly true that the second location was made with great care, and was believed to be beyond possible danger. It has cost a large sum more to rebuild this road than it would have originally cost to construct it where it is to-day. Now, in determining the value of this property what if any allowance is to be made for this experimental outlay? If the Government itself had constructed this railroad it probably would have had the same experience and would have expended the same amount of money which the owners actually did.

This illustration puts the question in a very striking form, but the same idea enters more or less into the valuation of most of the railroads of this country. There has of necessity been a certain amount of experiment before hitting on the right and proper thing. Does this development expense constitute an element of value which may be recognized to-day, or must the owners of these public utilities stand the loss of their mistakes in the same way that the owner of a private enterprise would? Vast sums of money are involved in the answer to that very simple question.

Take another illustration of a different character. Some years ago in a case pending before the Commission the Northern Pacific Railway Company had occasion to prove the value of its property, and it did so by showing the cost of reproduction. For this purpose it gave the units which entered into that railroad as it then stood. Among other things it showed the amount of land upon which its right of way was located, and what it would cost to acquire that land for railroad purposes at that time, claiming that this cost of reproduction was the value of its property.

The Northern Pacific runs through the city of Spokane. When the road was built that city was of small account but it has come to be of much account, and in the process of development it has grown up on both sides of this railroad. The Northern Pacific claimed, and it may very well have been true, that the cost of acquiring its right of way through the heart of the city of Spokane at the time of the hearing would be at least five million dollars. The original cost to the railroad was nothing, the right of way having been entirely donated either by the Government or by private benefaction. Now to whom belongs this five million dollars? Has the Northern Pacific the right to tax the public for a return upon that amount? Whether it has is a thing of great consequence, for nearly one fourth of the entire value of the Northern Pacific Railway, as shown in that proceeding, was the value of its right of way, much of which was due, as in the city of Spokane, to increase in value over its original cost. This question of the unearned increment presents in the valuation of our railways a difficult problem.

Illustrations like those two might be indefinitely multiplied, but these are sufficient to exhibit the thought I wish to emphasize: namely, that this valuation of our railways is not a mere engineering problem, involving the cost of reproduction or the amount of depreciation alone. Indeed, it is not properly an engineering problem at all but rather a social and economic problem; a legal problem; in its final analysis a political problem. It is for the Commission first of all to ascertain all these facts and from them to deduce what in its opinion is the fair value of these properties. That conclusion may undoubtedly, in some respects and to some extent, be modified by the courts. In the final analysis it will be for the people to say what measure shall be meted out to these railways. While courts and commissions may influence and even temporarily determine questions of this kind, the will of the masses finally prevails, and it is therefore of first importance that the body of the people should have accurate information.

Looking to the work of the Commission alone, and answering the first division of my subject, the thing to be done is this: To marshal every fact obtainable with respect to the present condition and the past history of our railways, and from a just consideration of all these facts to determine the fair value of the properties to-day.

The Time and Expense.

The Valuation Act became a law on March 1, 1913, and the Commission was required by its terms to begin the work within sixty days and to prosecute it with all due diligence. The Commission entered upon this task within the limit specified but up to the present time no substantial progress has been made in the body of the work. While the Commission was permitted by Executive order to employ ten engineers who will have general superintendence of the engineering work, our employes, both engineers and accountants, must be obtained through the Civil Service Commission. Since the Government had never done any work of this character, that Commission had no rolls from which competent persons could be employed, and although the preparing of such registers was at once begun and has been prosecuted with all possible diligence, it is only within the last few weeks that they have been actually available.

For the purpose of making the surveys to which allusion has been made the country has been divided into five districts, by States, each containing approximately fifty thousand miles of railroad. Each of these districts will have an organization of its own which will conduct the surveys within those particular limits. Subsequently these surveys will be worked out, partly in the district and partly at the head office in Washington. Surveys began in all the districts except one about February 1, and will begin in that district about February 15.

It has seemed to the Commission the part of wisdom to proceed with caution until sure of its ground. In this view a railroad has been selected in each district upon which these surveys will proceed with deliberation and in such manner as to afford a kind of instruction school to all employes. This preliminary work will occupy three or four months, which means that we shall not be in position to rapidly develop our organization until about July 1. Beginning then, or slightly before, our force can be rapidly increased.

While it is somewhat hazardous to make an estimate of the time required without more experience than we have had, it is my opinion that the field surveys ought to be concluded in from four to six years from July 1st next. It is hoped that the accounting and other work will keep pace with our field surveys. The putting together of these facts, that is, the actual valuation will necessarily lag somewhat behind the obtaining of the facts themselves. The Commission will in the near future have all the data with respect to some railroads, but whether a valuation will be at once announced in such cases must depend upon the method which the Commission selects for determining the various questions which will arise and to which reference has been made.

Any estimate of the expense must be even more unreliable than that of the time. Railroads have been valued both by public authority and by themselves, and the cost of these valuations has run all the way from two dollars to seventy-five dollars per mile. I have already said to you that this work, in order to meet its purpose, must be thoroughly done, and this will require a larger outlay upon the part of the Federal Government than has usually been made by the States. Moreover the work required by this Act is much more comprehensive than has ever been undertaken by any State. Knowing what must be done, the methods which must be followed, the rate of accomplishment which has been attainable in other places, I should say, basing my estimate upon the experience of State commissions, that fifteen dollars per mile would be sufficient to cover the engineering part of the work and ten dollars per mile the accounting and other features. This would aggregate for the entire 250,000 miles between six and seven million dollars.

If the experience of railroads be consulted an entirely different conclusion is reached. The cost, as reported to us, of valuations conducted by the carriers themselves runs from forty to eighty dollars per mile. It is true that in this work by the railways certain things are included which will not be done by the Commission, but to offset this most carriers have ascertained simply the cost of reproduction, with no reference to depreciation, and with but little accounting work. If our information is correct and if the Government cannot do this work cheaper than the railroads themselves, it will cost at least fifty dollars a mile to complete the work. I told the Appropriation Committee of the House last July that from what I knew about the subject then I should not advise Congress to enter upon this undertaking unless it was ready to expend at least twelve millions, and another six months' reflection has not changed that opinion.

While, however, this is a large sum, and much more than Congress contemplated when the Act itself was passed, it is the merest trifle compared to the enormous values involved. The capitalization of our railroads at the present time aggregates nearly twenty billions of dollars. It has been recently estimated that these securities at their present market value are worth from fourteen to fifteen billions. The cost of this work, therefore, cannot exceed from one tenth to one twentieth of one per cent of the value ascertained, a sum utterly insignificant in proportion to the magnitude of the thing dealt with.

Look at this from another standpoint. One purpose—to some minds the principal purpose—of this valuation is to determine the amount upon which the public should be required to pay a return to the owners of these public utilities. Assume that this valuation varies the amount upon which such return should be paid by only five per cent. Five per cent of twenty billions is one billion, and a return of six per cent upon one billion is sixty millions annually. The difference to either the public or the railroad may therefore well be, for every year, five times the entire cost of the valuation itself. Certainly there is nothing in the expense which should deter the people from demanding the prosecution and completion of this undertaking in a thorough and competent fashion.

THE BENEFIT.

What, finally, is the purpose of and the benefit to be derived from all this outlay of money and of energy? There are many advantages, some of which I shall refer to without thereby intending to minimize the others. And first let me call your attention to the incidental benefit to the investing public.

Many persons seem to hold the opinion that the Government in dealing with monopolies like the railroad owes nothing to the investing public. Caveat emptor—let the buyer take care of himself—such has never been my own thought. The investor is a necessary part of the well-balanced state, and is often in need of protection from public authority. It is the duty of the Government within reasonable limits to see to it that the would-be investor is not hoodwinked in the making of his investment and that the value of his investment, when once made, is not improperly destroyed.

In railway investment the public has a more immediate interest. Just in proportion as railway securities commend themselves to the investing public it is possible for the railway to obtain the money with which to make necessary improvements to its property. Whatever benefits the credit of our railways; whatever gives to railway securities the investment quality with bank stocks and municipal bonds; whatever, in a word, takes from railroad stocks the speculative and uncertain element, indirectly reduces the cost of furnishing railway service and thereby inures to the benefit of the general public.

Now when any investor can know from reliable sources the exact character of his investment; how much it would cost to reproduce the property; in what state of efficiency that property is being maintained; above all, what is the value of that property for use as a railroad, there has been injected into railroad securities an element of certainty and of permanency which does not now exist. It seems to me therefore that this work of valuation will be of incidental benefit to the railway investor and so to the general public. While this has not been generally, perhaps not at all remarked upon as an advantage, it will turn out to be a substantial one.

To the general apprehension the object of this valuation is to determine what rates our railways should be allowed to charge for their services to the public.

While the property invested in our railroads and other public utilities is private property, the Government has, in consideration of the nature of the service rendered, the right to impose upon this property the terms and conditions under which it shall be used. It may, in the case of a railroad, determine the character of its equipment, the schedules upon which its trains shall run, and in general may control the operation of the property in so far as the public has an interest therein. It may fix the rates to be charged by that railroad for the transportation of persons and of property and for any other service which it renders to the public. To this power of the Government over such private property there is this important qualification: Under the Constitution of the United States as interpreted by the Supreme Court of the United States such property must be allowed a fair return upon the fair value of the investment.

What is a fair rate of return depends, probably, to some extent upon the character of the property and its location. The relative functions of the legislative and judicial branches in the fixing of that rate are not yet clearly defined. All just men concede that it should be substantially the same as the return obtainable from private investment having the same incidents. Manifestly it is not a difficult thing to determine the rate of return to which this property is entitled. There still remains, however, the value upon which this rate is to be computed, and until that value is known it is impossible to determine what total income the property is entitled to earn and, therefore, to fix the charge which may be justly made against the public.

The rates of public utilities are at the present day usually fixed by commissions, both state and federal. It is perhaps the natural inference that when the value of the property has been determined and the rate of return fixed the work of the commission in establishing the charge of the public utility is comparatively easy. It is only necessary to multiply the value by the rate and to allow a charge which will yield that income.

And this, with some important qualifications, is true as to certain kinds of public utilities. Take, for instance, a water plant or a gas plant. This serves a single community. As a rule it meets no competition in that service. The amount of its business is known or can be forecast with reasonable accuracy. Even matters of depreciation and such like have come to be pretty accurately understood. It is possible, therefore, to fix with some confidence the rates of such a utility when the value of the investment is known.

With the railroad, however, this is entirely different for the reason that it seldom happens that a single railroad can be considered by itself. The greater part of the business of the railways of the United States is subject to competitive conditions of one sort and another which are largely controlling so that the rates of one are necessarily bound up with those of another. A moment's thought will show the extent to which this is true.

Nearly every station at which considerable quantities of traffic originate or are delivered is served by more than one railroad. It is possible, for example, under present switching absorption tariffs in force at the city of Chicago to reach any point within the switching limits of that city at the same rate by any line which reaches the city. The same is in substance true of the city of New York and the great industrial district of which New York is the center. It is also true that while two given points may each be served by but two railways a great variety of routes between those points can be found by choosing different intermediate carriers. For example, lumber from almost any point of production in the South can reach Chicago by a variety of routes through the various Ohio River gateways. Now while it may occasionally happen that the rate by one route is different from that of another, broadly speaking the rate by competing rail lines is the same. Whatever charge is made by one line between New York and Chicago must be made by all; whatever charge is imposed for hauling lumber to Chicago by one route must be the same by all competing routes.

Nor is direct competition of this kind the only competitive force of controlling influence. An examination of conditions in almost any agricultural State like Iowa, for example, will show that the farm upon which the corn or the wheat is grown lies midway between two lines of railroad so that the product of the same can be sent to market by two, and often by three, different carriers. Manifestly the rate made by each of these carriers for the transportation of this farm produce must be substantially the same. If the farm of Mr. A is five miles from the Northwestern and the same distance from the Rock Island, the rate of transportation under which his wheat and corn and live stock can reach Chicago must be the same bv both lines, and the financial necessities of either line are not of the slightest significance. This kind of competition, which is sometimes denominated by railroad men "cross-country competition," powerfully influences and often absolutely controls the rates upon certain commodities which furnish large amounts of traffic.

Still further it often happens that where the service is purely local and can only be rendered by one railroad still the rate which must be applied is dictated by competitive conditions. A coal mine may be served by a single carrier, but that carrier cannot therefore impose whatever rate it sees fit upon the product of that mine, for, unless the charge to the point of consummation is as favorable as that from some competing mine by some other carrier, the mine itself cannot do business and the railway loses the traffic. This sort of competition is of universal application and of tremendous influence.

Without further pursuing this subject, which of itself is a broad one, it will be seen that the railroads of this country are so bound up together that their rates are largely interdependent. It is impossible to shake a single railroad free from every other and fix its charges upon the basis of a fair return upon its fair value as you would in case of a gas or water plant. The rate established for one, of necessity influences and frequently absolutely determines the rate of all, a fact which must never be forgotten in discussing this subject.

Now it is evident that if the Commission should select that road most advantageously situated, that road whose business is the largest and upon which the conditions of operation are the most favorable, and should so adjust its rates as to yield a return of six per cent upon its value, every other railroad standing in competition with it would receive less than a six per cent return and some railroads might receive nothing whatever. The schedules under which one carrier would earn a fair return upon its investment might not even pay the operating expenses of its competitor. Upon the other hand, if that road laboring under the greatest disadvantage were to be selected and such rates established as would permit it to make a return of six per cent upon its investment, its competitors would one and all be receiving an undue return upon their investment.

A certain amount of traffic is strictly noncompetitive. What proportion this may bear to the whole I have no idea; the per cent would be small. Theoretically it might be possible for railroads to take up the slack, so to speak, between what would be a fair rate for one and that for another by an adjustment of rates upon this local business. In the Minnesota Rate Case and cognate cases, recently decided by the Supreme Court, it was held that while the principal railroad systems involved had not established confiscation and must therefore submit to the rates prescribed, certain roads of minor importance had made out their case. These lines, in so far as they could, were allowed to charge higher local rates than the others.

The effect of this would be to establish extremely high local charges upon certain lines and extremely low local charges upon others. Upon main lines and upon lines of dense traffic, rates would be low; upon branch lines and those with less traffic, charges would be high. The general effect would be to concentrate business into certain localities, whereas it has always seemed to me that the aim should be to so adjust transportation charges as to secure a general diffusion of values and of business. If this Government operated its railways rates would be generally the same upon all lines in given sections.

While, however, I wish to make it perfectly plain that the problem of establishing railway rates will not be solved by this valuation, I desire to say with even greater emphasis that that problem will be enormously simplified. It can be known with certainty whether the general level of rates is or is not too high, and in establishing the charges to be observed by a single carrier, even in fixing the rate upon a single commodity, it will be of much benefit to know the value of the property involved. Every railroad commissioner will join with me in saying that here is the only solid foundation upon which he can stand; that the determination of these values is indispensable to the just and intelligent administration of his work.

While this valuation will be of incidental benefit to the investor, while it is essential to the work of the rate-making tribunal, it seems to me that its greatest immediate value is political. The state of the public mind towards our railways is such that this information is absolutely necessary.

Some years ago the Commission had occasion to examine the reasonableness of rates to points upon the Pecos Valley Line of the Santa Fe System. The railroad under consideration runs from Amarillo, Texas, into and through what was then the Territory of New Mexico. That part of the line in Texas had been constructed under a Texas charter, and therefore in conformity with the Texas stock-and-bond law under which the capitalization could not exceed the investment in the property. The railroad in New Mexico had been built under a charter from that territory without any limitation upon the amount of securities which could be issued. The cost of the road was substantially the same in Texas and New Mexico—perhaps slightly greater in New Mexico. The capitalization of the Texas company was $8,000 per mile; that of the New Mexico company $42,000 per mile.

This is a somewhat striking instance of what has happened at certain times in certain parts of this country in the building and capitalizing of our railroads. From what is known of such operations there has come to be a deep-seated conviction in the minds of many people that our railroads as a whole are enormously over-capitalized and that the public is paying interest and dividends upon securities which represent no actual value.

Upon the other hand, it appeared in the Eastern Rate Advance Case, decided in 1910, that the Pennsylvania Railroad had in the ten years preceding that investigation put into its properties east of Pittsburgh more than two hundred million dollars from earnings, which, therefore, was not represented in the capital account of that company. It is well known that many other railroads have improved their property out of earnings without any corresponding increase in their capital accounts. This leads many to the conviction that while individual railroads may be overcapitalized our railroads as a whole are worth more than their stocks and bonds.

Consider the developments of the investigation into the affairs of the St. Louis and San Francisco System, conducted by the Interstate Commerce Commission. Consider conditions in New England to-day, where the fate both of the Boston and Maine and the New Haven systems is trembling in the balance. None of these questions can be answered; none of these situations can be justly dealt with until we know the actual value of these properties. This is the question which arises before the student of this railway problem at every angle. This is the question which must be answered before this problem can be intelligently discussed. For this reason, above all, it is important that this work should be pressed to a completion in the most expeditious and the most trustworthy manner possible.

The Burden of Unnecessary Legislation

SUMMARY OF ADDRESS OF IVY L. LEE, EXECUTIVE ASSISTANT, PENNSYLVANIA RAILROAD COMPANY, BEFORE TRAFFIC CLUB OF NEW YORK AT WALDORF-ASTORIA HOTEL, NEW YORK, JANUARY 27, 1914.

THE general public is but little aware of the enormous amount of legislation which has placed peremptory burdens on railroad operation.

In 1913, there were 42 State legislatures in session. In them, 1,395 bills were introduced affecting railway operation, and 230 such bills were passed. In 1912, only 48 such laws had been passed out of 292 introduced in 19 legislatures.

From August 1, 1906, to January 1, 1914, the Pennsylvania Railroad Company incurred expenses of approximately $12,000,000 on account of new laws, Federal and State, governing railroad operations. Some of this legislation did good, and I am not here to complain of it, but much of this legislation has entirely failed to achieve its declared purpose.

1. The Federal law restricting the hours of telegraph operators to nine hours resulted in an actual increase in the number of men found asleep on duty. Men with heavy continuous duties had not previously worked more than eight hours any day. The twelve-hour men had light work, but they knew when the day's work was over that they must return to duty twelve hours later. Consequently they took care of themselves. The greater leisure under the nine-hour law has encouraged misuse of time with its consequent results.

The law was designed to secure additional safety. It has not added appreciably to safety, but it costs the Pennsylvania Railroad Company about $200,000 a year,—the annual interest at 5 per cent on $10,000,000 of capital.

2. The semi-monthly pay bill in several States has encouraged extravagance and made it necessary for railroad companies to exercise unusual vigilance to prevent men going on duty under the influence of liquor. Wiser heads in our large railroad centers deplore the bill. This measure adds nothing to efficiency, and costs our company $250,000 a year,—the annual interest on $5,000,000 of capital.

3. Some twenty States have enacted laws, and there is pending at Washington a bill to cover the nation,—compelling the use of electric headlights of high candle power. Everyone who has driven an automobile at night knows that when he approaches a car coming in the opposite direction, he is temporarily blinded by the light. So it is with engineers running trains on double or four-track railroads. These measures are not in the interest of safety; they increase the danger in many cases. English railroads, for example, use no headlights at all.

4. Our own company is subject to laws which compel us to utilize about forty regular passenger cars for the benefit of crews on trains carrying baggage, express or mail only. The crew would be perfectly comfortable in one of the other cars. These cars cost about $10,000 each. Thus $400,000 of equipment is put to this wasteful use.

5. Extra Crew Laws, to which we are subject in many States, compel the employment of a large number of unnecessary men. These men do not contribute to the safety or the comfort of the public. Extra crew laws are costing us $550,000 a year in Pennsylvania; $180,000 a year in New Jersey, and $120,000 a year in New York; $850,000 in these three States, or the annual interest on $17,000,000 of capital.

The few laws mentioned alone thus impose an annual burden upon our own company equal to the annual interest on $32,000,000 of capital. If we had spent that amount of capital to provide needed facilities for the public, additional safety appliances, and removal of grade crossings, and did not earn any return upon it, we would be even better off than we are to-day, pouring out these sums without corresponding benefits either to ourselves or the public we serve.

Safety is essential at all costs. But in an imperfect world, all perfection is not instantly attainable. Safety cannot be insured by resolution or mechanical device. It is primarily a resultant of care and discipline.

Railroad officers are interested in safety above all else. Any accident on a railroad places its management on the defensive. Laws to compel railroad managers to make their railroad safe are ineffective unless the money with which to do it is obtainable. If that money is obtainable, no one is more delighted in assuring safety than the railroad officer himself.

It is not necessary to pass laws to compel bankers to keep their money in fireproof safes. If the banker can afford it, he buys an armor-plate vault; if not, he gets the best thing he can. His very business life depends on his guarding safely the money of his customers.

So with a railroad, safeguarding the lives and property of patrons is the very essence of operation. It's the human nature of it.

But everything can't be done at once. It would cost $600,000,000 to replace every wooden passenger car in this country with an all-steel coach. It would cost the Pennsylvania Railroad $600,000,000 to remove all the grade crossings on its own system alone.

The most important thing must come first. A mandatory law compelling certain expenditures may be desirable in itself, but as preventing provision for other pressing needs, becomes really a public injury.

It is therefore of supreme consequence that railroad managers, sincerely striving to do the best they can, have every stimulus and aid in meeting the many conflicting demands made upon them and not be compelled to waste the limited funds at their disposal upon unnecessary and useless expenditures.

The Responsibility of the Common Carriers Under Tariff Legislation

From an Address Delivered by E. D. Hotchkiss, General Freight Agent of the Chesapeake and Ohio Railway at the December Meeting of the Richmond Railway Club.

THE Interstate Act has been on our statute books since February 4th, 1887, but was not until after the passage of that Amendment in June, 1906, commonly called the Hepburn Act and the subsequent amendments of 1910, that it was vitalized and became the regulating force in transportation matters it is to-day. It may, therefore, be said that the present day tariff dates from 1906.

The carrier is now required to print, post and file with the Interstate Commerce Commission tariffs which will not only show all its rates of transportation between different points on its own route and points on the route of any other carrier when a joint rate and route have been established, but it must also publish all such accessorial charges as storage, demurrage, icing, stockfeeding, etc. It must also publish all privileges and facilities granted and allowed, such as terminal switching, transit, inspection, elevation, etc. It must go further and publish any rule or regulation that may effect the value of the service rendered the shipper or consignee. There is no form of service which the carrier either with or without compensation may hold out to the shipper or consignee save that published, posted and filed in its tariffs. Having thus initiated the schedules, the carriers must abide, under severe penalties, by them. Here rests the responsibility of the local freight agent.

The extent of this responsibility is emphasized when I point out that even the Interstate Commerce Commission itself is entirely without jurisdiction or power to modify, affect or alter the published tariff of the carrier save in the manner fixed by the Act itself. One of the former Commissioners speaking on this subject has gone so far as to say in effect that on the carrier having initiated its tariff, posted and filed it as provided by law, it has all the force and effect of an Act of Congress itself.

The law charges every person with a knowledge of rates. This is a practical absurdity, but it is nevertheless the foundation upon which the superstructure of the Interstate Act is built. Tariffs must, therefore, be posted for the convenient inspection of the public.

The Act as amended by the Hepburn bill requires that "Such schedules shall be plainly printed in large type and copies for the use of the public shall be kept posted in two public and conspicuous places in every station where freight is received for transportation in such forms that they shall be accessible to the public and can be conveniently inspected."

This provision is not materially different from that of the Original Act, but by the Hepburn Act, the Commission was also given discriminating powers to modify this requirement by special or general order.

Practical experience had, long prior to the passage of the Hepburn Act, demonstrated the posting (out of the custody of the agent) two copies of a tariff in a freight station was a useless burden upon the carrier. It was impossible to prevent their almost immediate destruction or mutilation, while on the other hand there was no compensating advantage to the public by having the tariffs out of the custody of the agent. It had become almost an universal practice among carriers to place the tariffs in the custody of the agent, and to post a notice in two conspicuous places in the stations to the effect that the tariffs were on file with the agent and subject to inspection on application.

In the exercise of the power given them in the Hepburn Act, the Commission promulgated a general order, which in its essentials is the same in plan as that initiated by the carrier.

By it the carrier is required to place in the custody of its agent all rate schedules applying at or from that station and to post a public notice of the fact. The carrier is required to supply such agents with suitable facilities for keeping the schedules in ready reference order. The agent is required to give any information contained in the tariffs; afford opportunity to examine any tariff without requiring or requesting the inquirer to assign any reason for such desire and to lend assistance to all seekers of information.

The carrier shall also require its traveling auditors to check each station tariff file at least once each six months unless special traveling tariff inspectors are employed. The requirement of this order is a substantial concession and saving to the carrier.

The Commission have announced in connection with it that it depends on the honor and good faith of every official to whom the duty of carrying out this order rests and to resolve every doubt in favor of the spirit of the law.

Here we have the joint responsibility of the local agent, division superintendent, traffic officers in charge of tariffs and the auditing department.

But we must not only post tariffs that the public shall have opportunity to meet the requirements of the law charging them with a knowledge of rates, the tariff must be intelligible and free from ambiguities.

This, I am sorry to say, has not always been true.

An amusing incident occurred not so long ago illustrating the point.

A certain general freight agent was called before one of the Commissioners; handed a tariff bearing his signature and requested to quote the rate on a given article between two points on his own line. After a long and embarrassing delay and much mental anxiety he finally found a rate, but lo! the joy of finding was at once dissipated by a note that made the application of the rate dependent upon certain contingencies and rates to be found in another tariff. After viewing the other tariff his perplexity was only increased. He consulted an atlas, then a shippers' guide. By this time he was so utterly lost in the maze of doubt that he had to "give it up."

My friends, how can the shipper who is charged with a knowledge of rates or the agent who is charged with applying them lawfully be expected to meet this obligation when the source from which he is to obtain that information is so wrapped up in doubt, as to cause the expert to "give it up."

I am glad to say that great advance and improvement in this direction has been made. By a set of rules promulgated by the Commission after consultation with and advice of the railroad company's tariff authorities, uniformity in the arrangement of tariff matter has been reached. This, together with the removal of ambiguities from tariffs, has done much to simplify and make the meaning clear, but we have not by any means reached perfection. Much is yet to be, and will be accomplished in the light of experience and in this connection, a movement is now on foot—the initiative being correspondence between the chief executive of one of the Western lines and the chairman of the Interstate Commerce Commission—looking to conference between the chief traffic officers and the Commission to the end that further improvements in tariff construction, if practicable, be accomplished. Theoretically the language of the tariff should be as carefully chosen against doubtful meaning as that employed in a will. It took many generations of the brightest minds to reach the present degree of perfection in the latter, yet now we sometimes hear of wills being "broken" because of doubt of the language of the testator.

The cost of compilation and printing of tariffs is properly a subject for serious concern to the carrier. This expense, already great, is increasing through the requirement for frequent reprinting of tariffs under those mandatory rules of the Commission which require reissue after the volume of supplementary matter, both as to number of supplements and extent of matter has reached certain limits. Larger stocks of tariffs are required to meet the demands of the industrial traffic managers, tariff bureaus of chambers of commerce, boards of trade, etc. This increased cost calls for the ingenuity and skill of the traffic officer in bringing the number of tariffs within the smallest limit.

A great economy in this direction rests in competing routes uniting in common tariffs, between common points, thus cutting out that immense expense of duplication by individual issues. I have long advocated common tariffs and have adopted them on the line I represent whenever the necessary concurrence of the other interested lines is secured. The main opposition to this plan has been the jealousies of the old established routes and trade names. I think the value of these factors is overestimated and entirely incommensurate with the great difference in the cost of producing tariffs under the two systems.

The telephone and telegraph have brought the manufacturer, jobber and consumer in close touch and small stocks and quick sales is the order of the day.

The vital consideration in transportation to-day is service. The route that offers this does not have to fall back on its pedigree of a long established trade name to secure its share of competitive business. It has been estimated that the cost of the recent reprinting of tariffs in Official Classification territory in the efforts of the carriers to secure a small advance in their rates will aggregate over two million dollars. I think I am within the bounds of conservatism when I estimate that this amount might have been reduced 25 per cent by the use of common tariffs.

The local agent can aid materially in effecting needed economies by carefully preserving and filing tariffs immediately on receipt. Cases have arisen when the cost of reprinting of a tariff is necessary to supply shortages in agents' public files, due entirely to failure of agent to preserve the original copy.

Time will not permit a further discussion of this subject. I have endeavored to limit the discussion to those features of tariffs which bring them within the province of other departments, but I cannot close without some reference to the importance of their strict observance by those charged with executing them. There are those of us who may think that the requirements of the law in this respect is too inelastic, unreasonable and unnecessary, but, good or bad, right or wrong, the law in this respect is too binding and the responsibilities and liabilities of the carrier too great to be jeopardized by any unauthorized and ill-considered act by employes charged with the duty of enforcing tariffs, however well meant.

Canceling the Privilege of Industrial Lines.—Executive officers of the Eastern railroads at a meeting held in Chicago on February 18th, unanimously voted to cancel switching and other allowances to all Chicago industrial roads on and after April 1st. This action conforms with the suggestion of the Interstate Commerce Commission and to the inference made by that body that applications for rate increases are inconsistent, while extensive favors are being granted by railroads in the form of allowances to important shippers. It is also reported that the officers of the Western roads who met with the Eastern executives, agreed to take similar action although no date has yet been set. As soon as the tariffs can be printed and filed, all rates and concessions granted by carriers in Official Classification territory to industrial railroads will be cancelled.

Regulating New Security Issues

EDITOR'S NOTE.—The following article, published in the New York *Times Annalist* of February 9th, indicates how the power over new security issues has been exercised by the New York State Commission, during the past few years to the satisfaction, in the main, both of investors and corporations. This interesting survey of the work of the New York Commission would appear to have more than an indirect bearing upon the National question and will therefore, prove of interest to our readers.

WHILE everybody has been debating about the wisdom of having the Interstate Commerce Commission supervise the issuance of securities by the railroads of the United States, the Public Service Commission of New York has been regulating the output of stocks and bonds by the steam railroads and other utility corporations in the State to an aggregate of capitalization exceeding that passed upon by all the other State commissions combined, and big enough to serve as a specimen of regulation for the National Commission. However anybody else may feel about it, the New York Commission believes that it has already got under way a system of examination of the finances of New York corporations that is good for the public, the corporations themselves, and the particular individuals who invest money in the stocks and bonds issued by the corporations. It has just made public a report on this feature of its general work of regulation, in which it says:

"While the Commission, as it has frequently stated in its opinions, does not in making authorizations of securities in any way guarantee that the securities so authorized are a good or safe investment, yet its object is to render the company's financial statements and make its own conclusions constitute such basis that the investor will not be misled. It is believed that no other single agency will in the end result in better service or lower rates than an effective regulation of the financing of public service corporations. Only with correct accounts so that the investors may depend upon the accuracy of the financial statements furnished can public utilities finance themselves upon advantageous terms in competition with other avenues of investment."

The gist of the Commission's reasons for saying that it has made things so much better for everybody is that by requiring all the companies to have uniform bookkeeping methods, and to give conclusive evidence about the need of new securities, and what kind of financing they do, public utility financing has been standardized. Old slip-shod ways of doing things have been uncovered, and the companies have had to be more careful how they borrow money, how they spend it, and how they account for it. This has compelled managers to be more business-like. A financial statement from a public service corporation is rarely perfect even now, but the situation is very much improved.

"The primary cause of this is that prior to the promulgation by the Commission of its uniform systems of accounts little attention had been paid by many corporations to the proper reflection in their accounts and financial statements of their actual financial condition. Another contributing cause is that the inauguration of accounting systems by many of the corporations in conformity with the accounting orders of the Commission necessitated a decided change in their methods, and their employes can be only gradually trained and accustomed to them."

What it means to the proper handling of corporations, as well as to the interests of their security holders, to have some outside authority come in and overhaul the accounts is shown thus:

"Some of the corporations appeared to be in an unsatisfactory financial condition, and were very desirous of promptly securing from the Commission authority to pay off such current liabilities with an issue of bonds or stock, which securities after having been approved by the Commission would be more salable and place the credit of the issuing corporation in a better light before the investing public than would be the case if they continued to carry a large unfunded debt. Many of these current obligations represented money that had been borrowed ostensibly for capital purposes, but in reality were incurred in order to pay operating expenses, taxes, interest, or dividends. In other cases, by far the larger proportion had been incurred for capital purposes, but the books of the corporations had been kept in such a manner that it was not possible to prove this without a most elaborate investigation."

The experience of the Commission in security regulation has proved some rather unexpected things:

"Applications for permission to consolidate or merge, and form corporations controlled by holding companies, are constantly before the Commission. In this connection the Commission has had less difficulty in securing adequate service from corporations which are controlled or operated by interests of sufficient magnitude to warrant the employment of high-grade men as executives. Such interests also have a keen eye to the securing of additional business and development of the territory, which in many cases has caused them to adjust voluntarily their rates in order to secure it."

There are certain things in the financing of the holding companies that the Commission has been wary about, however:

"Their capitalization requires careful scrutiny, as it has long been the custom in the business world when bringing about changes and economies to issue sufficient securities to capitalize the future for a long period in advance. In cases of miscalculations where this is done, it results in receivership, unreasonable rates, and, what is most important, poor service."

It would seem to be that a possible outcome of the movement for regulation of security output by corporations will be enforced financial efficiency on the part of their officers, who will not be free to make any but good terms when they borrow money:

"Another problem that is receiving a great deal of attention from the Commission is the price at which securities which become liabilities of the issuing corporation shall be permitted to be sold. The Commission is required in every order to certify that the amount of securities to be issued is reasonably required for the purpose. This makes it necessary that the Commission shall ascertain that bonds and other obligations which are to be sold at a discount are authorized to be disposed of at a price which is not less than their reasonable market value at the time of authorization, inasmuch as the lower the price at which the securities are sold the larger the debt incurred for the purpose, with a resulting increased burden on the corporation."

Not even will short-sighted financing be possible:

"Orders made by the Commission usually contain a prohibition against pledging and hypothecating the securities authorized for loans without the specific approval of the Commission. Such pledging should not be on too disproportionate a basis, as otherwise, in the event of a sale under such hypothecation, the securities of the corporation might be issued without the corporation having received an adequate return. The money stringency and the falling off in the market for securities of all classes of corporations has been markedly noticeable to the Commission in the largely increased number of applications for authority to pledge securities as collateral for temporary financing. This practice on the part of public utilities of the State can of course be justified only upon the expectation that the conditions which appear to necessitate it will be temporary. In the event of these temporary loans falling due, and there again being no opportunity to sell securities on a reasonable basis with which to pay the same, it would necessitate a further pledging on probably a more disadvantageous basis."

It used to be thought that the regulation of the Commission was to be hostile to the interests of the companies and their security holders, and beneficial only to the general public in the way of reduced rates and improved service. For a long time far-sighted investment bankers have seen that in America, as in Europe, wise regulation would come to mean an assurance of investors. In New York, the Public Service Commission is trying to prove that faith well founded.

A State Railway Rushing Wilfully to Ruin*

By Francis A. Bonner,

Associate Director Bureau of Railway News and Statistics.

NOT far from directly beneath our feet on the nether side of Earth works a Government railway system exceeding slightly in length the Pere Marquette but falling short in width. It cost some $25,000 per mile to build, which is pretty cheap. On the other hand it is entirely narrow gauge; its steep grades run up hill and down dale like a trolley line; its tiny sleepers carry 45 to 60-pound rail and of ballast it boasts little. The maximum speed limit on some important portions is fifteen miles per hour. It is known as the Government Railways of Western Australia.

Ability or inability of one government of English stock to manage successfully a system of this size argues nothing, of course, for or against ability of another nation of kindred stock to operate successfully one of 90 times the mileage and 300 times the traffic, such as our own. Yet certain defects often are said to be inherent in public operations of this character. One is subservience to the labor vote as a matter of policy through advances in wages; the other subservience to the shipping and traveling vote as a matter of policy through undue cutting of rates. The trouble is probably at least as apt to be found where employes of the railways number 2,000,000 as where only 7,000 down in Western Australia; as likely where 90,000,000 people travel and ship $3,000,000,000 worth yearly as where 300,000 ship and travel $10,000,000 worth.

Experience in Public Ownership.

Few know the defects more to their sorrow than the Western Australian Railways. There, in that tiny system, rises the usual spectacle of a Government Railway Commissioner charged with operation for the people, recognizing and owning publicly to these selfsame evils of State ownership, pointing the danger and fighting in vain to induce his own Government to apply a remedy and check its headlong course toward financial ruin of its carriers. When two such policies come together—placation of the labor vote by greater payment of wages, placation of a larger vote by reducing rates and thus the wherewithal to make the payments—financial stability is likely to suffer from the impact. In Western Australia earnings for the fiscal year to June 30, 1913, for the first time in history exceeded £2,000,000 ($9,740,000). Again in gross of $746,000, however, was offset by a rise in expenses of $791,000 over the year before. Interest paid on debt rose on the average from 3.46 to 3.52 per cent. Surplus fell in two years from $1,090,000 to $122,000; the net return on capital was 5.32 to 3.56 per cent. The margin between that 3.52 per cent interest paid on debt and this 3.56 per cent net with which to pay it measured on June 30, 1913, the Western Australian Railway's distance from bankruptcy.

Government Errs on Side of Liberality.

Such a condition occasions little surprise after consideration of what this Government system has done to curry favor of its voting passengers. Requests for increased facilities have arisen so frequently and are pressed so strongly, the Department has erred so consistently on the side of liberality that the Commissioner of Railways cries loudly now for a halt. Passenger train mileage and reduced fares must be curtailed severely if ruin is to be avoided. So great has been the surplus of generosity, in fact, that nothing save a deficit is left for passenger traffic. Apportioning mixed train mileage and adding passenger train mileage the earnings from fares represented for the last year $1.05 per train mile. The cost of working was $1.29 per train mile. In working cost alone there was thus a loss of 24 cents per train mile exclusive of 43 cents chargeable for interest! Despite an increase of population of nearly 50 per cent in ten years and increased weight, capacity and standards of equipment the receipt per passenger train mile in 1912-13 was less than in 1902-03.

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*Reprinted, by permission, from the Rand, McNally Bankers' Monthly.

Much of the loss, it is true, arises from a steady decline in length of journeys with consequent loss in the average receipt per journey. But it rests also upon the effect of excursion fares now applying to a larger number of journeys on a greater number of days and over greater areas, while in company with repeated rate concessions in deference to demands of the public for increased facilities, passenger train mileage has risen consistently, much of this addition being empty. "When these conditions are realized," says the Commissioner, "it may well be seen that the Department must rather look for openings to reduce passenger train mileage than to increase it, and for openings to increase fares rather than the reverse."

Unremunerative Freight Rates.

Unremunerative rates for freight service have arisen largely from a policy of "fostering infant industries" which the present management denounces as now useless to the industries and ruinous to the railway. Agricultrue and coal mines have been the chief beneficiaries. Since 1907 fertilizer has been carried at one-half cent per ton mile, a rate pronounced unparalleled in Australia (though by no means in the United States) for the purpose of encouraging the growing of wheat and development of new agricultural areas. The commodity, it was urged, would be carried in cars otherwise run empty to the country to return laden with wheat; the rate was necessary in order to induce more general use of fertilizers, increase the yield per acre and thus add to the railway revenue. This traffic has failed, however, to move as expected and the older farming districts now are pronounced well able to pay in full for the cost of service. Advances to the "miscellaneous" rate is demanded by the management, which would raise the charge to 2.4 cents per ton per mile.

Some Rates that Are Excessively Low.

Coal has been enjoying a rate of 30 cents per ton for the first five miles plus one cent per ton mile thereafter. Denouncement of such a rate as excessively low is interesting when we contrast the rate of .47 cent per ton mile on bituminous coal which is the average on United States railways. Yet for coal also an advance to the miscellaneous rate is demanded on the ground that this industry too is amply able now to stand upon its own feet.

As part of its policy, to make matters worse, the Government has steadily to ask competitive bids for its fuel and is paying excessively for the coal it buys from the very mines so subsidized by unprofitable rates. Had bids been asked, the Commissioner of Railways asserts, the Government roads might have saved 75 cents per ton on the 166,877 tons purchased, a tidy sum of above $125,000.

"As a matter of policy," says the Commissioner, "the various governments which from time to time since inception of the industry have dealt with the question have decided the price and distribution of orders and have abstained from submitting the contracts to competition.

"The difference of at least three shillings per ton between the price paid and the commercial value of the coal is in my opinion a bonus to the industry of some £266,700 per annum which should certainly not be made a charge on the Government Railways."

Governmental Roads Show Heavy Loss .

Solely because of these profitable rates on fertilizer and coal and excessive payments for fuel the Government railways last year lost some $371,000 which must come out of the taxpayer's pocket if the system is not to deteriorate. But to make matters still worse wage concessions cut ever larger slices from these depleted earnings. Nor has benefit ensued. "Improvement in conditions of employment," says the Commissioner, "has not put an end to the demands made upon the Department." In two years wages and salaries on these little railways have risen $1,110,000. Salaried employes have gained an average of some $35, wages staff some $73 annually per man; gains which suggest significantly, to say the least, the comparative numerical strength and organization of the workers affected. Why such expansion has been allowed to consume the meager substance of the railways is best told by the Commissioner himself:

"The year under review has been one of continual pressure from the staff generally for increased remuneration and emoluments and it is with regret I have to refer again to the evil of political influence in this connection.

Are Powerless to More Than Protest.

"If such matters are taken in hand by members of Parliament or of the Government, acquiescence is thereby given to the action of those who have approached them and the Railway Administration is powerless to do more than protest.

"Unless the practice referred to is put down with a strong hand in whose power it lies to put it down that portion of the Government Railways Act which was and is intended to remove the railways from political influence will become a dead letter. In any case it is a question of time alone when concessions so made to unreasonable demands from departmental employes are bound to result in revulsion of public opinion."

Response Is Inefficiency.

How has efficiency responded to these easy-won concessions?

"It is with regret," says the railway chief, "that I have observed no general increase of energy or effort corresponding with such a large increase of expenditure."

And why should he expect to? Where neither the quality nor quantity of service nor any resultant of supply and demand in the labor market but merely the strength of numbers behind an appeal activates excessive concessions of the kind at the hands of a subservient master, what relation exists between wages and efficiency? Where it is not the justice of labor's plea but solely the force of combined voices which encompasses the desired end, where economic law is discarded and an idea fostered that the Government is moved not by reason but by fear at the brandishing of organized labor's weapon of the strike, what relation remains in labor's mind betwixt zeal and compensation?

What Is Taking Place in France.

How uniform is the outcome! C. Colson, Councillor of State of France, writing of wage expansion on a State railway on the opposite side of the globe, the nationalized Western Railway of France, says:

"Now if by means of these sacrifices which have to be paid by the tax payers of the whole of France the administration of the State Railway has secured the devoted services and the gratitude of its employes, one might perhaps maintain that it had not paid too much for such a manifest advantage to itself and to its customers. But if there is one point about which there is a general agreement among all those who are in direct contact with the employes of the nationalized railway it is that these employes have never been less zealous or more fertile in complaints and recriminations."

Protest Made by John T. Short.

Surely the plight of Western Australia's State railways, with earnings about to fall beneath interest charges as a result of reductions in rates and increased expenditures for wages and material thus forced upon the Government as a matter of policy, is serious. One man, John T. Short, keen minded Commissioner of Railways, has fought in vain against the inevitable result, his solid advice to his Government as to the financial effects of its policy overruled repeatedly by political expediency. But the time for reckoning has arrived.

"I put the question now," says he, "as I claim to have done at all times in the past by reports to the Government and by my statutory reports to Parliament.

"Continuous pressure is exerted in opposite directions. Our customers are constant in urging upon the Department increased expense in the shape of train mileage and facilities and on the other hand demands for lower freights and reduced fares are equally constant. Labor organizations press for improved conditions of employment, shorter hours and other concessions. Rates of interest on capital are rising.

"As to where improvement is to be looked for it is difficult under existing conditions to say. By reduction of the passenger service or by improved conditions for the supply of coal, reduction of expenditures is impossible; and by reasonable increase of freights and fares, as effected in other parts of the Commonwealth under similar circumstances, improvement in the earning power is certainly practicable.

"Both alternatives are unpopular; but the results of our working for 1912-13 (crystalized in the fact that it cost £74 to earn £100) appear to me to necessitate their urgent consideration if railway earnings are to continue in the future to cover railway working expenditure and interest charges, and to provide a surplus for the treasury in addition as in the past years."

Aiding the Farmer

Mr. George D. Ogden, general freight agent of the Pennsylvania Railroad, delivered an interesting address before one of the recent sessions of the Farmers' Week at the New Jersey Experiment Station at New Brunswick on "How the Pennsylvania Railroad Helps the Farmer." He pointed out that by the stimulation of example as well as by helpful suggestions his company has undertaken to show how to cheapen the cost of production, raise the standard of the produce and increase the yield per acre.

He presented the following interesting table showing the low cost for transporting food sufficient for one meal for the average family of five persons:

Commodity.	Cost.	Freight.
Apples (5)	7.50c	⅛c
Beef (2 lbs.)	35.00c	1 c
Berries, fresh (2 qts.)	10.00c	1½c
Cabbage (1 head, 5 lbs.)	5.00c	¼c
Chicken (5 lbs.)	90.00c	1¼c
Milk (1 qt.)	9.00c	½c
Onions (10)	2.70c	¾c
Oysters (1 qt.)	22.00c	1-3c
Peaches, fresh (2 qts.)	10.00c	1 c
Potatoes (6)	3.75c	½c
Tomatoes, canned (1 can)	5.80c	1-3c
Tomatoes, fresh (2 qts.)	4.00c	½c
Turnips (6)	3.00c	2-3c

George D. Ogden.

Mr. Ogden pointed out the various plans the Pennsylvania Railroad has adopted to co-operate with farmers, and made a number of suggestions which he said would minimize the importance of obstacles, as follows:

"A shipper calls upon the agent at shipping point and orders a car to load for a market many miles distant.

"The vehicle of transportation is furnished; and here it might be well to remark that the cost of the car as compared with the cost of a farm wagon is in the ratio of SEVEN to ONE, or, to put it another way, seven wagons could be furnished for what it costs to supply a single freight car. The car aforementioned is loaded, shipping instructions furnished, and within a reasonable time the arranged service of the railroad company provides an engine and crew to move the car from the loading point to the first division or junction point, there to connect with another train, and so on by operating divisions or connecting railroads, until its final destination is reached.

"Several hundred employes are engaged in the work of so manipulating the trains, running on the freight tracks over a portion of the road, and again on the passenger tracks and back again to the freight tracks, in order to meet the requirements of an expedited service with the primary object in view of reaching destination at a fixed hour.

"Assuming the car reaches destination with reasonable promptness, in the case of perishable, the agent immediately calls the consignee on 'phone and notifies him of arrival, which is confirmed in writing, and if the contents of the car is of satisfactory grade, and the market in a receptive mood, the lading will be unloaded without delay. This seems reasonably easy of accomplishment, and it would be, if upon arrival at destination the consignee would promptly accept the shipment.

PERISHABLE FREIGHT DIFFICULTIES.

"It pays to grade at shipping point. This would seem to rob the carrier of tonnage, but, frankly, it would be very much better for all concerned if the rule were strictly observed, and, indeed, insisted upon at the shipping point. Perishable is rushed over the road at high rate of speed, and upon arrival at market found to have been loaded in an unsatisfactory condition, off grade, and carelessly packed, resulting in refusal by the consignee, compelling the delivering line to sell the property account of whom it may concern.

"It is most surprising that so little sensitiveness is shown to a factor which plays such an important part in appealing to buyers and affecting prices. I speak of careful selection in picking, the choice of containers, intelligent packing and proper stowing in cars. These four elements, if unobserved, counteract the naturally expected addition to prices and profits to be derived from the patient toil that is spent upon increasing the yield, improving the nature of the commodity, and the selection of markets, with many other details that go into the guardianship of the grower's interest. You must be surprised to learn the amount of freight charges alone that is involved in fruits and vegetables rejected by consignees. With the Southern railroads and the carriers touching the Eastern seaports, this amount approximates $75,000.

CAUSE OF CONGESTION AT TERMINALS.

"In large cities foodstuffs are generally received and delivered at a designated terminal. Deterioration and decay of perishable, rendering it unmarketable, very largely contributes to congestion, which has the effect at certain seasons of so crowding the railroad facilities that shipments which might be in prime condition and arrive when the yards are blocked with other perishable, are delayed in reaching the consignee, and in this respect the carrier is helpless in protecting its patrons against loss.

"Permit me here to refer to a burden upon railroads which the shipper cannot remedy in any marked degree, and we do not propose to ask or suggest the impossible. The height of the season for certain perishable commodities, such as strawberries, watermelons, cantaloupes, and potatoes in the larger producing territories, is for a comparatively brief period, thus compelling the railroads to undertake to provide maximum facilities and equipment to take care of the rush.

"No other branch of commercial activity would consider it prudent so to do. Of course, an overcrowded market is objectionable, with its consequent low values, but, as aforesaid, it is uncontrollable, at least under the present system of distribution. Does this not emphasize the importance of grading and proper packing at shipping points?

HELPING THE FARMER.

"The United States office of markets was established last May. The promulgation of market grades and standards, it is understood, will be one of the first matters taken up by that office.

"It is also proposed to look after transportation matters, particularly to see that suitable equipment is furnished, especially in the matter of refrigerator equipment.

"On November 30, 1913, a grand total of 4,780 refrigerator cars were available and owned by the Pennsylvania Railroad. It is now contemplated to add to this equipment not less than 1,000 refrigerator cars next year, unless some unforeseen situation should arise that would render impracticable providing the necessary money to pay for them.

EDUCATIONAL TRAINS AND EXHIBIT CARS.

"The first educational train was run in 1908, with an itinerary covering three days and a total of 22 stops.

"Lectures were delivered at each point of about forty-five minutes' duration, by representatives of the Agricultural Colleges or Experimental Stations.

"These educational trains have been run over almost every line in our system, comprising 5,311 miles east of Pittsburgh, and covering practically every aspect of the farm problem. The States traversed by these traveling colleges were New Jersey, Delaware, Maryland, Virginia and Pennsylvania.

EXPERIMENTAL FARM.

"In 1905 the Long Island Railroad Company, which, while operated independently, is a Pennsylvania Railroad line, purchased seventeen acres of land at Wading River, on Long Island, and an experimental farm was started.

"This farm was so successful that in 1906 a second one was purchased at Medford, on Long Island, consisting of seventy acres.

"In connection with this experimental farm work on the Long Island Railroad, a monthly paper is published by those in charge of the farm, entitled the *Long Island Agronomist*.

"It has been developed that quite a large number of settlers have been attracted to the line of the Long Island Railroad through the demonstration on the part of this company as to the possibilities of truck raising on small plots of a few acres each.

"Another effort in this direction was the purchase of an experimental or demonstration farm at Bacon, Del., on a portion of our road devoted almost entirely to agricultural pursuit.

"This is a fifty-acre tract and was intended to demonstrate what can be produced under what might be termed unfavorable farming conditions, and for the purpose a piece of land known to be rather unattractive from a farming viewpoint, having lain idle for a number of years without fertilization or cultivation, yet from this farm we have been able to produce almost every known variety of fruit and vegetable product, and, notwithstanding the farm was practically undeveloped in May, 1910, in the New York Land Show of 1912 an exhibit of agricultural products grown along lines of the Pennsylvania Railroad, a large number of which were from our own farm, took the first prize for the best railroad exhibit in the United States and Canada.

"The exhibit in the New York Land Show referred to, with many additions of worthy specimens received since that time, is now en route over the lines of the Pennsylvania Railroad East of Pittsburgh, Erie and Buffalo, in what is known as our Agricultural Exhibit Car. This car contains the most magnificent collection of fruits, grains and vegetables yet displayed by any railroad.

"Accompanying the agricultrual car is another car known as the Dairy Exhibit, devoted to the improvement in dairy methods, with resultant increase in the production of milk both as to quantity and quality.

"The aim of these cars, which are systematically covering the entire Pennsylvania System by making two-day stops, is to encourage the farming community to the development of the greatest possible activity in the production of food products.

"This effort of the Pennsylvania Railroad in agricultural development, extending and broadening its point of view from the farmers' train with its limited effort both as to the time at each stop, as well as the shorter period on the road, up to the exhibit cars which traverse the line thoroughly and give the farmer ample time for discussion and thought, is the latest word in coöperative effort on the part of the railroad and the farming community."

Transportation of Food Stuffs

ADDRESS BY FRANK ANDREWS, OF THE DEPARTMENT OF AGRICULTURE, AT THE MEETING OF THE PHILADELPHIA PRODUCE EXCHANGE, PHILADELPHIA, PA., JANUARY 20, 1914.

SEVERAL years ago a railroad station agent in Florida purchased some potatoes as a business venture and sold them in the North. The transaction was profitable enough to encourage him to plant potatoes the following year. Again he was reasonably successful; and the third year he planted still more, but found to his dismay that many of his neighbors also had planted. He wrote to his commission merchant telling him a tale of woe. Seven hundred acres were planted to potatoes near his station. What was he to do about it? The commission merchant wrote back not to worry; to harvest the crop and ship it. The merchant was one who sold Florida potatoes to many markets, some as far north as Montreal and some as far west as Seattle. This is but one of thousands of illustrations of the wide distribution of what we may call "produce," that is, vegetables, fruit, butter, eggs, and poultry. Each region of large production for a given crop has open to it hundreds of large markets. There are some 200 markets in the United States, any one of which will purchase at one time a carload of such highly perishable produce as strawberries or peaches, and of course there are still more markets where potatoes can be sold by the carload.

Eggs produced in Kansas are sold in cities as far east as Boston, New York and Philadelphia; as far south as New Orleans, Houston and Galveston, and as far west as San Francisco and other cities on the Pacific Coast. Poultry from Tennessee and from Texas also finds its way throughout a large part of the United States. The peaches of Georgia reach not only the Eastern markets, but are shipped westward even as far as the Missouri River where they compete with the product of Arkansas. For each producing region there is a large number of markets to which lines of distribution radiate; so each large market is connected with many producing regions. Kansas City, for instance, receives its lettuce not only from nearby market gardens, but also from Colorado, from New York, from Florida, Texas, Louisiana and California. In New York, and probably Philadelphia also, cantaloupes from the Imperial Valley of California have been sold on the same day with those from Georgia and Florida; and, later in the season, the cantaloupes from Maryland and from New Jersey have been in the same market with those from Colorada. Produce is brought from foreign countries also. Within the past year Philadelphia has imported eggs from Roumania, and they may soon be brought here from China. Some of the butter sold in this city recently came all the way from Omsk, in Asiatic Russia.

Among the interesting things to read on the subject of transportation of food stuffs are the marks on packages of produce at commission merchants. A walk along South Front street or Dock street, or parts of Chestnut will afford much of interest. A barrel of apples from Albion, New York, may have for its neighbor a barrel from Winchester, Va., boxes from the Yakima Valley of Washington, or Hood River, Oregon; near them possibly crates of onions from San Antonio, Texas, boxes of oranges from Redlands, California; and so on down the list. What may be seen on Dock street of this city is a duplicate of what may be seen in many produce districts of other cities. The markets all tell the same story, as to the wide range of the sources of food supply, and, on the other hand, the wide range of markets from which shippers may choose.

Among the classes of problems concerning the transportation of food stuffs, two classes may be mentioned. One class of problems has for its object the lowering of cost of transportation. Grain is a commodity which requires low costs, or it is not commercially possible to carry it. The success of the efforts to reduce freight rates on grain is illustrated by the fact that the average cost of carrying wheat from Oregon and Washington to England, a voyage of some 18,000 miles, is about 16 or 17 cents per bushel; and it is by no means unusual that the freight rate on wheat from Duluth to Buffalo, some 1,100 miles, is one cent per bushel.

A second class of problems affecting the transportation of food stuffs has for its object the improvement of the service. The commodities which this class of problems affect include the different kinds of "produce," especially those that are valuable enough to pay for good freight service. One of the elements of this high class service is refrigeration. Other elements are speed, rgularity, and what may be termed "flexibility" of service.

The importance of speed in transporting perishable products is evident. The longer they are on the way the more they are apt to deteriorate. Fast freight trains are made up usually of a small number of cars. Twenty-five cars is not an uncommon number for a train of peaches, while 40 is not an uncommon number for ordinary freight, except in hilly country. The average speed of some high-class freight trains amounts to about 400 miles in 24 hours. This includes stops at terminals, for the purpose of icing, changing crews, etc.

Regularity of service also is important for perishable freight. It is necessary for certain classes of produce to reach market by a certain hour. If the produce is late it may be necessary to hold it until the following day, or if a Sunday or holiday intervenes, it may be held over two days and with considerable loss. It may be said that while regularity is not perfect and while trains are occasionally late, their regularity is established to such an extent that business transactions are based upon it.

By flexibility of service is here meant the facility for changing the route of a car while it is on the way. This is also called diversion in transit. For instance, a car of oranges shipped from Redlands, California, and consigned to New York may have been on the road for a day or two when the destination is ordered to be changed and the car sent to Galveston, or possibly to St. Louis, or Duluth, or somewhere else. The purpose of this diversion is to avoid selling in a glutted market. The shipper from his news of supply and price judges which market is the most desirable and orders the car sent accordingly. In order to find where a car is he may inquire of a railroad agent. The progress of cars in fast freight service is reported as they pass certain stations along the route; and these telegraphic reports inform the shippers where the cars are.

Among the results of his highly organized system of transportation, two may be mentioned: The season in which some products are on the market has been greatly extended. Refrigeration, as well as fast freight service, has aided this extension of seasons. In many cities cantaloupes are sold for five months in the year; strawberries may be bought from December until late the following summer; while lettuce, string beans, and similar products are in the market twelve months of the year. Another result of this widely extended system is that the consumer suffers less than formerly when a crop fails in a given locality. The strawberry crop of a certain region may fail, but the general supply, although reduced, will not be cut off.

Superheating Developments in England

(From Our London Correspondent.)

THERE is continued development in England in the use of superheating in locomotion. The three principal styles of superheated steam used, the Schmidt, Swindon and the Robinson, are pretty well known by this time. One thing that British locomotive engineers are keeping their eyes fixed upon is that one result of the use of superheated steam is the possibility of using larger cylinders with the same boilers. Advantage may be taken of this fact, if it is unnecessary to increase the tractive effort, to employ a large cylinder and reduce the boiler pressure; and a still greater advantage, which up to the present has perhaps hardly been fully developed, is the opportunity of building locomotives which shall be more powerful at high speeds without increasing the weight more than is entailed by the superheater itself. This additional weight is usually about two tons.

The oil used in superheater engines is usually a pure mineral oil, or a blend containing up to five per cent of fixed oil. It should be free from suspended matter and perfectly neutral. At ordinary temperatures the viscosity is generally so high that the oil will scarcely flow, and though it thins rapidly on heating the time of efflux of 55 c.c. from Redwood's viscometer should not be less than 160 seconds at 212 degrees F. The flashing point should not be lower than 500 degrees F. (closed test) . It is desirable that the oil should have a certain degree of volatility so that any that may become deposited on the walls of the cylinders or in the valves may be vaporized and pass away with the exahust steam, instead of carbonizing. On the other hand, it must not be too volatile, else it would evaporate without lubricating. Thus the range of the grade of oil is a comparatively narrow one, and experience shows that even oils which give good results leave a carbon deposit, though if examination and cleaning are done at intervals of 20,000 to 25,000 miles no trouble is likely to occur with a suitable oil.

The usual custom is to employ mechanical lubricators. On the Midland Railway an eight-feed pump is used, four connections delivering to the piston valves, two to the piston rod, packings, and two to the tail-rod bushes, the last being covered with a dummy gland. From 1½ to 1¾ pounds of oil is used per 100 miles run. The pumps are preferably double acting, so that the supply of oil might be continuous, as any long interval between the feeds might cause trouble.

On the Midland Railway sufficient experience has not yet been obtained to enable any actual figures of costs of maintenance to be given, but everything tends to show that they would not in any case exceed those of saturated steam engines, in spite of the fact that the engines to which superheating has been applied have been worked much harder than when they used saturated steam. The boilers of superheater engines show considerably less wear than is usually the case with locomotives engaged on similar work and using saturated steam; hence they would run longer without "shopping" and are out of service a proportionately shorter time. No doubt the extra equipment required on a superheater locomotive tends to increase the costs of maintenance, but the author believes the increase is more than compensated for by the saving in boiler repairs.

Practically the only extra attention required by superheater locomotives in service is that involved in keeping clean the large tubes which contain the elements. It has been found that the tubes can be kept quite clean by using steam between 100 pounds and 80 pounds per square inch taken from the boiler as the pressure is falling. The frequency of the cleaning depends on the quality of the coal used and the manner in which the engine is worked, but under ordinary conditions satisfactory results are obtained if the tubes are cleaned after about every 300 miles of running.

In making tests on the Midland Railway the comparisons of coal economy are based on the consumption per ton mile. The coal is weighed on and off the tender and the water measured. The weight of the train is taken on the actual weight of the coaches, plus 10 per cent for passengers and luggage, and to the weight of the engine loaded is added the weight of the tender with two thirds of the maximum load of coal and water. The usual heat of the steam on the Midland superheater engines is 600 degrees to 630 degrees F., or 230 degrees to 260 degrees superheat. Occasionally temperatures of 700 degrees F. are reached without trouble being experienced though it is doubtful whether existing conditions will permit them to be used continuously. In one case where a bank having a gradient of one in 50 and a length of eight miles was encountered the temperature of the steam regularly rose to 700 degrees, but fell considerably on the run down the other side.

In one series of tests, consisting of six double trips between London and Leeds (198 miles) for each engine, the two engines were of the 990 class (4-4-0), one having been rebuilt with a superheater. The latter engine showed a saving of 23 per cent of coal and 22 per cent of water over the former on the ton-mile basis. After it had run 62,000 miles without "shopping" it was found that the coal consumption had increased only 1.5 per cent and the water consumption 2.8 per cent per ton mile. In similar tests carried out with the same engine and a three-cylinder compound, the consumption of coal was 15 per cent and of water 17.5 per cent less per ton mile than with the compound.

Two engines have been rebuilt exactly alike, except that one has been fitted with a superheater, while the other uses saturated steam, and tests have been made with them between London and Derby (128 miles). The superheater engine shows a saving of 30 per cent in coal and 34 per cent in water over the other. Probably the reason why these figures indicate a larger comparative saving over those previously quoted is that while the superheater engine is running well within its capacity the other has to be worked hard to run the trip.

Recently it was decided to superheat the steam supplied to the high pressure cylinder of one of the Midland's three-cylinder compound engines. Some doubt is felt as to the effect of the continued high temperature in the cylinder, but after three months' running no disadvantages have revealed themselves, and the engine has run perfectly satisfactorily. Tests against a sister engine using saturated steam show a saving of 25.9 per cent in coal and 22.3 per cent in water. The average coal consumption on five double trips between London and Leeds was 0.0679 pounds for the superheater engine and 0.0916 pounds for the other, the corresponding figures for the water being 0.619 pounds and 0,797 pounds.

Two 0-6-0 engines employed for coal traffic have been equipped with superheaters, and tests were made on six double trips between Toton and Brent, 126¾ miles apart. In every case the loaded train from Toton to Brent consisted of 45 wagons and a van, while the return train was made up of 80 empty wagons and a van. The loaded trains were weighed vehicle by vehicle on a weighing machine, their average gross weight being 700.7 tons in the case of the superheater locomotive and 712.1 tons in the case of the other. The average weight of the return empty trains was slightly over 573 tons in both cases. With superheated steam there was a saving with the loaded trains of 14.3 per cent in coal and 20.4 per cent in water, and with the empty trains of 18 per cent in coal and 24.8 per cent in water. For the loaded trains the average coal and water consumption was 0.0785 pound and 0.727 pound per ton mile with saturated steam and 0.0673 pound and 0.579 pound with superheated steam, while for the empty train the corresponding figures were 0.1234 pound and 0.978 pound with saturated steam and 0.1012 pound and 0.735 pound with superheated steam. This marked difference was partly due to the empty trains being worked at a somewhat higher booked speed, but the undoubtedly higher resistance per ton of a light long train over a heavy short one is accountable for a very considerable portion of the variation.

BOOK REVIEWS.

American Red Cross Abridged Text-Book on First Aid.—Railroad Edition, published by P. Blakiston Son Company, Philadelphia.

This interesting publication of 150 pages, is by Major Charles Lynch, of the Medical Corps of the United States Army, and is prepared and endorsed by the American Red Cross Society. It is profusely illustrated, graphically portraying the steps to be taken in rendering first aid to the injured, and the various injuries generally sustained in industrial occupations are classified and dealt with in well defined groups in separate chapters. The last chapter deals exclusively with railroad and shop first aid, and besides briefly reviewing the inception and growth of the safety movement on the railroads of the United States, contains a large number of "don'ts" so arranged as to apply to the various departments of this service. As a whole, the book constitutes a valuable addition to the greater safety movement.

Financial

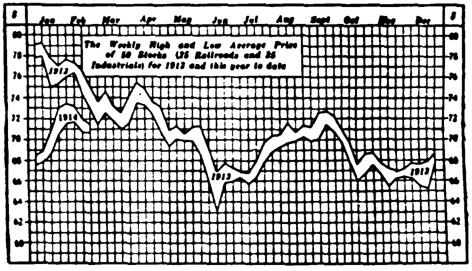
An Improved Outlook.

THE first two months of the calendar year have witnessed some improvement in the outlook both from a business and financial point of view. While it is too soon as yet to draw any definite conclusions from these improvements, they are, nevertheless, of such a character as will prove encouraging.

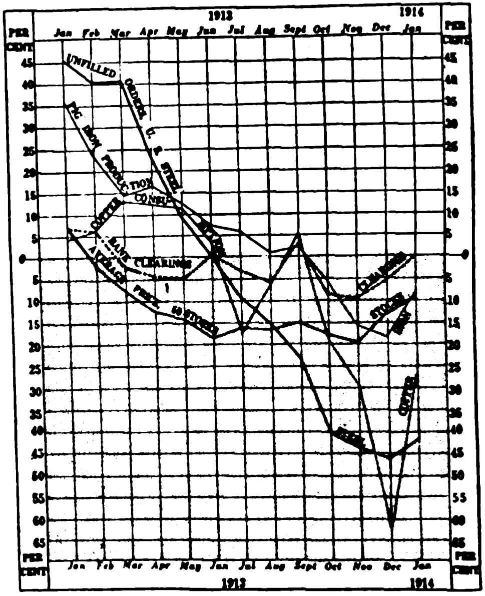
The following diagram which appeared in the New York *Times Annalist* of February 23d, graphically portrays the upward movement which has recently occurred in bank clearings, the average prices of representative stocks, copper consumption, pig iron production and the unfilled orders of the United States Steel Corporation. All of these important indices appear to have united in emphasizinig the fact that more recent developments have had a stimulating effect both upon business and financial markets.

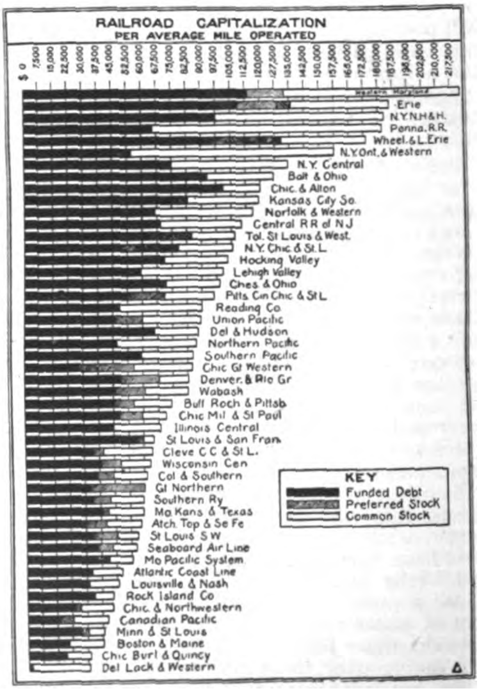
Two reasons stand out prominently as largely influential in the partial restoration of confidence as evidenced by the upward trend referred to. First, the apparently friendly attitude of President Wilson towards all business activities of a legitimate character and his publicly expressed desire to interfere just as little as possible in such activities, and second, the growing conviction on the part of financial and business interests that the carriers have practically won their case before the Interstate Commerce Commission for an increase of five per cent in their freight rates. In fact, the belief has been steadily growing and at the present time is nation-wide in its effect, that no single development will have such a marked effect upon the return of business confidence and its resultant prosperity, than the granting by regulative authorities of the petition of the Eastern roads to increase their freight rates. The *Annalist* of the same date also contains an interesting diagram, reproduced herewith, showing the course of the security market as represented by combined averages of twenty-five railroad and twenty-five industrial stocks for the year 1913 and for the first month and a half of 1914. As indicated by these figures, the current year has witnessed a distinct upward trend with the exception of the recent period affected by the decision of the Interstate Commerce Commission to again postpone until September the tariffs which have been filed in the advance rate cases. The force of this influence, however, has been largely dissipated by the subsequent statement of the Commission to the effect that this suspension was largely a matter of form and that it was the desire of the Commission to complete this case and to render a decision at the earliest possible date. It is now generally believed that a decision will be reached in the course of the next two or three months. Whether the railways will receive the horizontal increase of five per cent asked for or whether the Commission will attempt to make its own readjustments, is a matter at the present time of pure

The Course of the Market

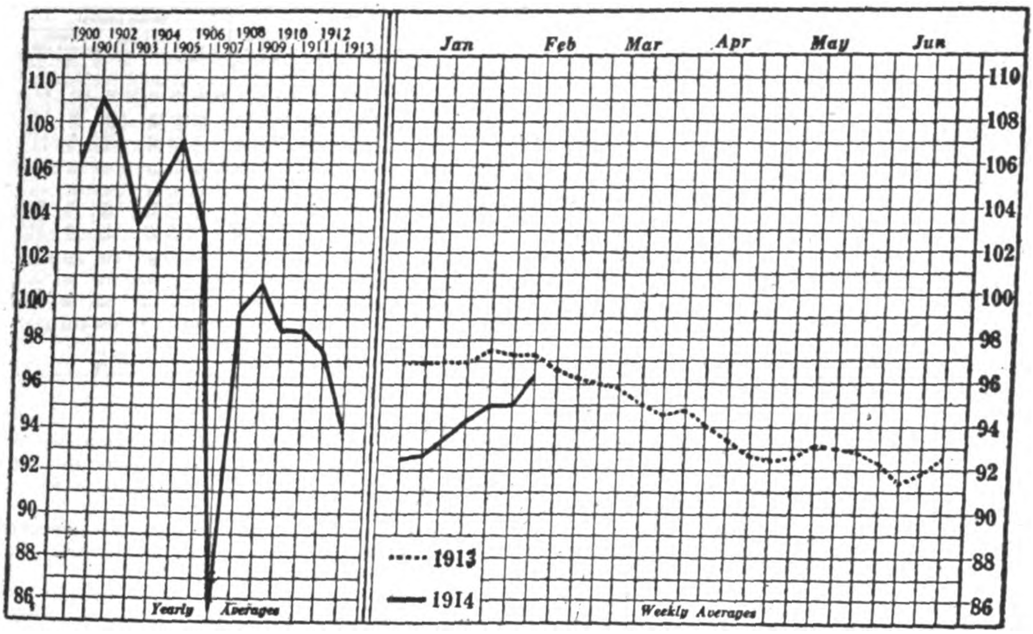


The Upturn





Curve of the Basic Price of Bonds



speculation. One thing is certain, however, that unless the railroads are permitted to appreciably increase their net incomes, the detrimental effect of such a restrictive policy will be felt by every industry in the country.

The Mexican situation still remains a disturbing factor and recent developments have offered little or no indication as to what attitude this country must ultimately assume. President Wilson is still playing a waiting policy with the evident hope that conditions will so improve as to relieve the United States of the responsibility of armed intervention.

A favorable development in the bond situation during February rested in the fact that a large portion of the new financing was done with long termed bonds rather than with short term notes as has been so general of recent years. While the Southern Railway and the Erie each issued an amount of three-year notes, this was evidently due to the inability of these companies to prepare in time the large blanket mortgages with which they intended to do most of their financing in the future. The Rock Island is also reported to be contemplating a short term issue, but owing to the local problems involved, this does not necessarily indicate the general trend of the market.

Recent orders for railroad freight cars present an indication of business revival that is interesting and important. The inquiries and contracts which have appeared in the last few days indicate a distinct revival in this branch of the railway supply industry which adds to the promises of 1914. In addition, the United States Steel Corporation report of unfilled orders on January 31st, show a total of 4,613,680 tons. This is an increase of 331,000 tons during the month of January and is a strong evidence of a reviving activity in the steel trade. While this increase is undoubtedly largely due to the fact that during a considerable portion of the month, the mills of the Steel Company were at a low rate of production, nevertheless the evidence of increasing demand is beyond contradiction.

Railway Revenues and Expenses for December and the Calendar Year.

THE Bureau of Railway Economics has issued its summary of revenues and expenses of steam roads in the United States for the month of December and for the calendar year 1913. Returns for December reduced to a per mile of line basis, and compared with the net returns for December, 1912, show a decrease in total operating revenues per mile of 5.2 per cent and an increase in operating expenses per mile of 0.1 per cent. Net operating revenue per mile was less by $61.00 or 16.9 per cent than for December, 1912, while that for December, 1912, was 10.4 per cent greater than for December, 1911.

For the calendar year 1913, total operating revenues per mile increased 3.7 per cent, and operating expenses per mile 7.3 per cent. Net operating revenue per mile decreased $183.00 or 4.4 per cent, while that for the calendar year 1912, was greater than for the calendar year 1911 by 5.1 per cent. Operating income per mile decreased $239.00 or 6.6 per cent.

The railways whose returns are included in this summary operate 224,990 miles of line, or about ninety per cent of the steam railway mileage in the United States. The operating revenues for the month of December, 1913, amounted to $247,398,764. This includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with December, 1912, the total operating revenues show a decrease of $11,576,925. The total operating revenues per mile of line averaged $1,100 in December, 1913, and $1,160 in December, 1912, a

SUMMARY FOR THE CALENDAR YEAR 1913 OF REVENUES AND EXPENSES OF STEAM ROADS

Compiled from monthly returns of the railways to the Interstate Commerce Commission
and covering the roads included in the monthly report of that Commission which are those having annual operating revenues of $1,000,000 or over.

ACCOUNT	UNITED STATES				EASTERN DISTRICT				SOUTHERN DISTRICT				WESTERN DISTRICT			
	Amount 1913	Per mile of line	Increase per mile over 1912		Amount 1913	Per mile of line	Increase per mile over 1912		Amount 1913	Per mile of line	Increase per mile over 1912		Amount 1913	Per mile of line	Increase per mile over 1912	
			Amt.	Pct.			Amt.	Pct.			Amt.	Pct.			Amt.	Pct.
Total Operating Revenues	$3 073 112 343	$13 723	$485	3.7	$1 366 318 727	$23 388	$998	4.4	$466 643 288	$11 150	$622	5.9	$1 248 130 198	$10 081	$831	8.4
Freight	2 131 912 110	9 514	318	3.4	953 090 759	16 325	659	4.0	332 912 889	7 961	480	6.4	846 308 470	6 830	130	1.9
Passenger	691 834 308	3 087	135	4.2	296 537 810	5 076	258	5.4	98 174 420	2 364	106	4.6	287 182 078	2 317	75	3.2
Other transportation	216 826 041	968	35	3.7	98 898 997	1 693	76	4.6	30 150 636	723	28	4.0	87 776 509	708	21	3.1
Non-transportation	34 539 776	154	13	9.0	17 191 861	294	21	11.8	5 425 414	130	10	8.4	11 983 101	96	5	6.0
Total Operating Expenses	2 189 563 930	9 772	668	7.3	1 012 387 917	17 330	1 596	10.1	336 539 744	8 066	404	6.5	840 636 289	6 782	313	4.8
Maint. of way and struct.	418 864 000	1 869	174	10.2	183 177 388	3 136	388	14.1	64 386 081	1 542	108	7.1	171 864 092	1 386	101	7.9
Maint. of equipment	526 880 048	2 351	231	10.9	254 920 000	4 364	515	13.4	86 381 113	2 069	153	8.0	186 609 873	1 497	130	9.5
Traffic	63 682 998	284	14	5.1	25 072 482	429	34	8.6	11 033 276	265	10	3.9	37 317 230	288	6	2.0
Transportation	1 103 274 447	4 924	226	4.8	517 141 472	8 852	612	7.4	162 375 384	3 893	216	5.9	423 737 639	3 419	60	1.8
General	76 940 397	343	23	7.3	32 087 585	549	47	9.3	12 439 978	299	13	4.7	38 384 884	301	16	4.9
Net Operating Revenue	883 548 313	3 951	d 183	d 4.4	353 930 810	6 058	d 598	d 9.1	130 103 614	3 120	128	4.3	401 483 889	3 239	d 82	d 2.3
Outside Oper. - Net Revenue	def 1 347 008	def 6	—	—	def 2 694 999	def 46	—	—	183 353	4	—	—	1 264 644	10	—	—
Taxes	130 543 407	583	44	8.1	55 875 477	960	68	7.7	17 402 344	417	30	7.8	57 646 666	465	38	8.9
Operating Income	751 737 904	3 364	d 229	d 6.4	295 360 334	5 052	d 728	d 12.6	112 906 723	2 707	103	4.0	345 091 867	2 784	d 116	d 4.0
Average Mileage Represented 1913	224 081				58 419				41 718				123 981			
Average Mileage Represented 1912	222 090				58 180				41 279				123 201			

* Less than one dollar. d Decrease. def Deficit.

decrease of $60 or 5.2 per cent. Freight revenue per mile decreased 7.3 per cent, while passenger revenue per mile decreased 0.8 per cent.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $180,086,863. This was $1,522,631 more than for December, 1912. These operating expenses per mile of line averaged $800 in December, 1913 and $799 in December, 1912, an increase of $1 per mile, or 0.1 per cent.

Net operating revenue, that is, total operating revenues less operating expenses, amounted to $67,311,901. This was $13,099,556 less than for December, 1912. Net operating revenue per mile of line averaged $299 in December, 1913, and $360 in December, 1912, a decrease of $61 per mile, or 16.9 per cent.

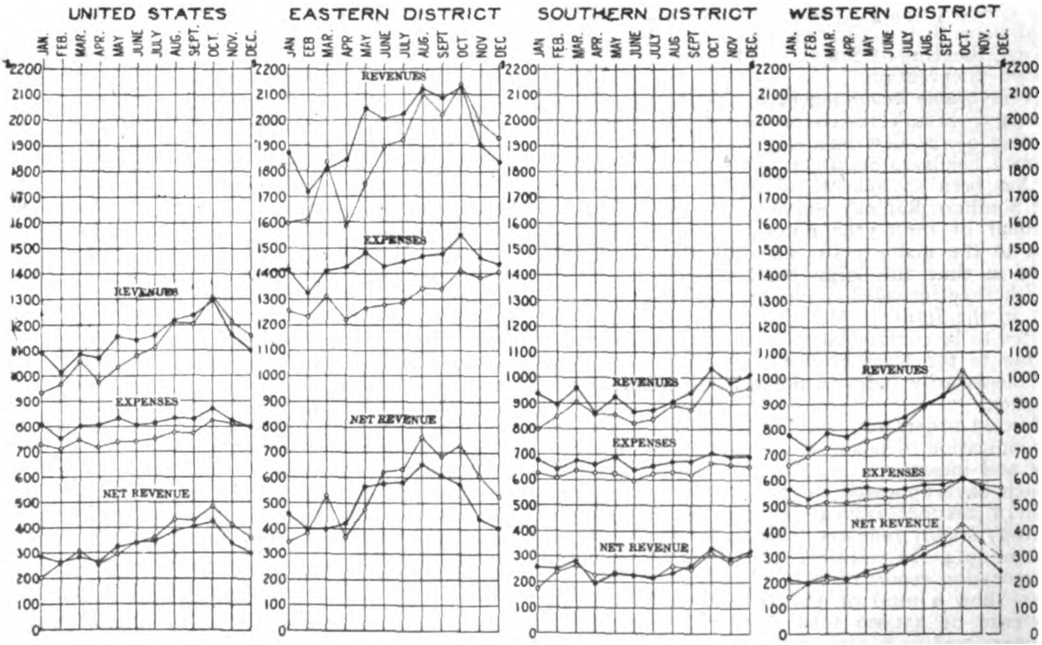
Taxes for the month of December amounted to $11,320,885 or $50 per mile, an increase of 7.2 per cent over December, 1912.

Operating income, which is net revenue from rail and outside operations, less taxes, averaged $248 per mile of line, and in December, 1912, $314, thus decreasing $66, or 21.1 per cent. Operating income from each mile of line for each day in December averaged $7.99 and for December, 1912, $10.12. Operating income is that pro-

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES OF $1,000,000 OR OVER

CALENDAR YEAR
1912 •
1913 •



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

portion of their receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction and for dividends.

The operating ratio for December, that is, the per cent of total operating revenues absorbed in operating expenses, was 72.8 per cent, which is comparable with 70.8 per cent in November, 1913, and 69.0 per cent in December, 1912.

Compilation of December returns makes possible a summary of earnings and expenses for railways having total operating revenues of $1,000,000 and over for the calendar year 1913. These lines operate about ninety per cent of the steam railway mileage of the United States.

Total operating revenues for 1913 amounted to $3,075,112,243. This is equivalent to an increase over the previous year of $485, or 3.7 per cent, per mile of line. Freight revenue per mile increased 3.4 per cent and passenger revenue per mile 4.2 per cent. Operating expenses amounted to $2,189,563,930, which was an increase of $668 per mile, or 7.3 per cent, over the calendar year 1912. Net operating revenue amounted to $885,548,313 representing a decrease of $183 per mile, or 4.4 per cent as compared with 1912. Operating income per mile of line decreased $239, or 6.6 per cent.

The railways of the Eastern District show a decrease in net operating revenue per mile of 9.1 per cent, railways of the Southern District an increase of 4.3 per cent, and the railways of the Western District a decrease of 2.5 per cent. All three districts show increases in total operating revenues per mile and in operating expenses per mile but in the Eastern and Western districts these increased operating expenses more than balanced the increases in revenues. Taxes per mile increased 7.7 per cent in the East, 7.8 per cent in the South, and 8.9 per cent in the West. Operating income per mile decreased 12.6 per cent in the Eastern District, increased 4.0 per cent in the Southern District and decreased 4.0 per cent in the Western District.

Operation

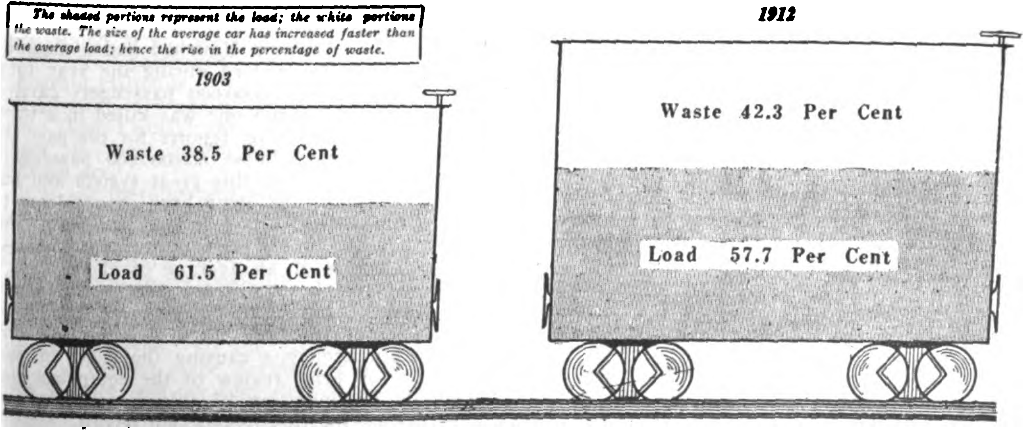
Comparison Between the Capacity and Load of Freight Cars.

RAILROAD officials have for a number of years recognized the fact that the load has not kept apace with the growth in the capacity of freight cars. Various means have been attempted in order to overcome this disadvantage but no success of a general character has, as yet, been obtained. It is a recognized fact that in perhaps no other single way could the railways inject so much economy into the operation of their lines than by the more general procurement of fuller carloads, but the various inducements which have so far been offered, have failed to accomplish the desired results.

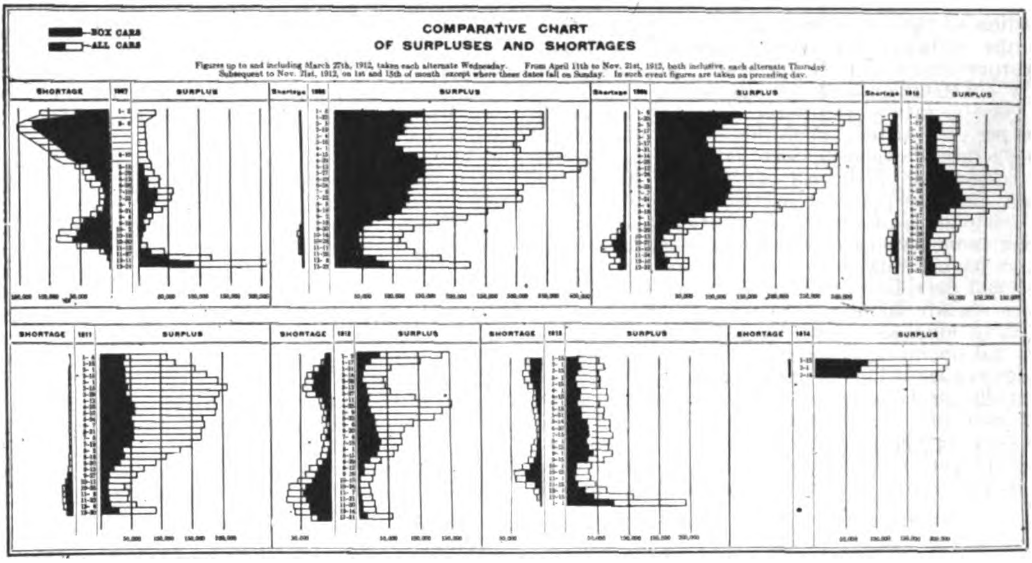
This question is interestingly discussed in the New York "Times Annalist" of February 16th, from which the accompanying diagrams were procured. These show that while the waste in 1903 was but 38.5 per cent of the full capacity of each carload carried, it had risen in 1912 to 42.3 per cent in spite of the fact that the average load per freight car was many tons heavier in the former than in the latter year. Furthermore, it is pointed out that as much as forty per cent of the total tonnage moved by rail in Eastern territory consists of coal and that in coal traffic loaded equipment runs one hundred per cent full. From this it is estimated that the average amount of wasted freight car capacity in the loaded movement of cars engaged in other than coal traffic must be instead of 42.3 per cent, in the neighborhood of 67 per cent. When in addition to this, it is appreciated that in thousands of instances, railroads are constantly hauling each day empty freight cars long distances, it is readily perceived what an enormous amount of space in freight cars is constantly going to waste for which as yet, no adequate or effective provision has been made for its utilization. To quote from the article in question:

"Though the percentage of waste in equipment has been increasing, as shown by such facts as that the capacity of equipment has increased faster than the carload and that the tractive power of locomotives has increased faster than the train load, yet the quantity of serv-

The Average Eastern Freight Car and Its Average Load



The shaded portions represent the load; the white portions the waste. The size of the average car has increased faster than the average load; hence the rise in the percentage of waste.



ice performed by the railroads has increased very much faster than the population. Let the measure of that service be expressed in ton miles.

"From 1903 to 1912 the population of the Eastern railroad territory increased seventeen per cent.

"In the same time the ton miles of transportation produced by the forty-nine railroads increased 53 per cent.

"That is to say, in 1903 each unit of population statistically consumed 2.582 ton miles of transportation, and in 1912, 3.383 ton miles, an increase of 31 per cent.

"There are sundry qualifications. The aggregate of ton miles contains the movement of freight for export. An increase in the average distance each ton of freight was hauled would increase the aggregate of ton miles of transportation produced. But the export traffic in relation to the whole is very small, and the haul lengthens, if at all, very slowly, so that the conclusion is irresistible that the per capita consumption of transportation has increased faster than anything else.

"That leads one to consider service.

"The statistical evidence of increasing waste, especially in the rising ratio of vacancy in equipment, is only in some measure a reflection upon railroad efficiency. For the rest it is a consequence of an increased demand on the part of the public for service, stimulated and encouraged, unfortunately, by the railroad traffic managers, who say that service is the only thing in which they can still compete. The competition in rates is a thing of the past. The competition in service has led to such absurd waste as that represented by two or three tons of 'dead freight,' like brooms and chemicals and castings, moving in a 40-ton car at a high rate of speed on schedules as rigidly maintained as those in passenger train service; or by a car that goes every day to a certain town, whether it carries 200 pounds or three tons, because that town demands the service. When the car is opened the freight is found to be largely of an imperishable sort, which might as well have waited for a carload. The unnecessary waste in service has more than offset the improvement in car loading which has been made possible by the integration of certain industries into very large units. The railroads evidently have lost control of service. Having once given it they cannot withhold it, no matter how wasteful it becomes. The shippers insist. They do but dimly see that in the end they have to pay for it—probably in the form of higher rates. There is only so much freight to be moved and so much revenue to be gained by all the railroads for moving it. To move it in larger loads and at lower speeds would greatly reduce their costs and thereby increase their profits."

The Car Situation.

THE American Railway Association has issued its statement of car surpluses and shortages as to February 14, 1914. This shows the total surplus of cars on that date to be 199,385 as compared with 211,960 on February 1, 1914, and 52,700 on February 15, 1913. The total shortages on the 14th of last month amounted to 2,333 cars, compared with 2,282 on February 1st, and 30,517 on February 15, 1913. The following diagram graphically portrays the surpluses and shortages by semi-monthly periods for the past seven years.

Safety on the Pennsylvania.

THE Pennsylvania Railroad had a magnificent safety record during the year 1913, as out of 111,000,000 passengers carried during that period not one was killed in a train accident. Furthermore, reports for the past six years show that almost 600,000,000 passengers have been carried by this great system and but sixteen of them lost their lives in accidents to trains, nine being killed in one accident. Put in another way, in six years out of approximately 5,000,000 trains or an average of about 2,280 a day, only five have suffered wrecks which cost the death of any of the passengers carried on them. Three of these years were entirely free from train accidents causing the death of passengers. A brief review of the equipment and methods of operation of this system discloses the reasons for this remarkable record.

The Pennsylvania at the present time is for the most part, a multiple track system running through the most congested districts in the United States. The roadbed is of the highest standard, the main line being laid entirely with stone ballast. During the past year the company paid $2,095 per mile to maintain 12,766 miles of track. The rail of main lines is of 100 pounds section and no lighter rail is bought. The Pennsylvania Railroad believes that from the safety standpoint nothing that it has done has been of more far reaching importance than the investigations it has made in the development of rail sections and specifications. While a rail is being rolled, it is carefully inspected by a representative of the Company and one rail out of every heat rolled, is tested for the interior fabric of the steel. The company keeps a complete history of every rail purchased and is thus able to classify failures and more readily guard against repetition. Much progress was made last year in increasing the number of cross ties per 33-ft. rail for the purpose of giving the track more strength and making it safer. On main lines twenty ties per rail are now being installed with eighteen as the standard on the branch lines.

All bridges are inspected monthly by division bridge inspectors and the division engineer together with the master carpenter are under orders to inspect them semi-annually.

In addition to the above inspection, there is a further inspection made by three men of practical and theoretical experience, whose duty it is to make detailed inspections of all bridges on the Pennsylvania Railroad. These men have had experience in both bridge designing and construction.

In connection with the employment of block signals, it is of interest to note that since January 1, 1913, all passenger traffic on main lines and branches, or in other words, one hundred per cent of the Pennsylvania's passenger traffic, has been handled under absolute or automatic block signal system. Forty per cent of all freight and passenger mileage is handled under automatic signals.

During the last ten years, 430 grade crossings have been eliminated at a cost of $27,742,433; during 1913 there were 55 grade crossings in process of removal. It is the policy of the Company to undertake no new work on which there will be grade crossings. The Pennsylvania Railroad has on its lines 1,613 all-steel passenger cars, which includes about fifty per cent of the entire steel passenger carrying equipment on the steam railroads of the country. In addition, 378 all-steel cars are in the course of construction. The Pennsylvania Railroad is operated under the most approved rules known to the railroad art.

It is the thoroughness with which these rules are carried out, however, which supplies the criterion by which operation should be judged. The divisional system of operation is used in an effort to localize responsibility. Division superintendents scrutinize carefully the action of all men under them and efficiency tests are frequently employed. Of the 4,478,135 such tests and observations made during the year ending June 30, 1913, 99.8 per cent showed perfect compliance with all rules.

Greater Safety Developments.

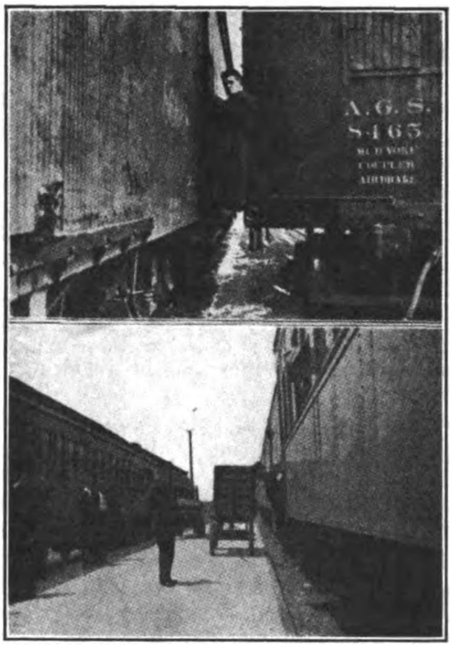
THE latest monthly safety bulletin of the San Pedro, Los Angeles and Salt Lake Railway Company, shows that a fifty per cent reduction in employes' personal injuries was effected in January. The record for the past three months was as follows:

Personal injuries to employes in November 75, in December 68 and in January 34. The 34 injuries in January, however, were only about half of what might be termed of a serious character, although attention is called to the fact that the seriousness of the injury is no good guide to the importance of the accident. The bulletin enumerates the various causes of these accidents, thus indicating how they may be avoided in the future.

IN an article appearing in the February issue of the Santa Fe Magazine, calling attention to the fact that the neglect of the safety habit does not pay, a number of forcible illustrations are presented showing the actual conditions under which various accidents have occurred, as, for example, one which shows a man carrying a pail of drinking water for a gang of workmen, attempting to board a rapidly moving switch engine. He miscalculated in some way and was killed. In other words, his laziness cost him his life.

Another illustration which shows a bumping post and drawhead, but which in itself does not disclose its death dealing qualities, calls attention to the fact that an employe instead of walking three feet out of his way or around the bumping post, took a chance and went between the post and the drawhead car and was killed. Had he had the safety habit, this would not have occurred, but he did not, and the cars being moved at that instant he was crushed to death.

THE Chicago and North Western Railway has instituted an innovation in greater safety work by the frequent publication of what it terms its safety bulletins in which attention is called by text and illustration, to the manner in which accidents occur from month to month on the lines of its system. Two pictures are produced herewith from its safety bulletin No. 4, published January 10th, which give an indication of the character of the service rendered. In the first, a switchman is shown riding on the steps of a car. He had noticed that the car to his right was close, but had measured the distance with his eye and thought he could clear it, the result was, he was knocked off and killed. A second illustration shows a baggage truck too close to a moving train. The conductor of this train was standing on the steps of one of the coaches looking down to see if anything was wrong with the tracks, when he was struck on the head by a trunk projecting from this truck and knocked off the car. Other illustrations of a similar character included in this bulletin have had their practical application and indicate in a most interesting and striking manner, how the lack of enforcement of the company's rules often leads to serious injuries or death.



The above illustrations show how two accidents occurred recently on the Chicago and North Western Railway. In one instance, a man misjudged the distance between cars, and in the other, a conductor was struck in the head by a baggage truck placed too near backing train.

A. T. HARDIN, vice-president of the New York Central Lines, paid a tribute to railroad employes in general, when, in addressing a safety first meeting of that road in New York City, on December 1st, he said:

"We have among us thousands of men whose type illustrates what we mean by 'Safe men.' The best of them sometimes make a mistake, because it is human to err, but it is the high average efficiency which counts. The Empire State Express has run to date about six million miles, or around the world two hundred and fifty times. During that period I cannot find where an engineman or a conductor or any of their crews have been guilty of sufficient neglect of duty to have jeopardized the safety of the passengers who have entrusted themselves to their care. The names of these men, and many others in the service who belong to a similar honor roll, are so well known to you that they need not be mentioned here. We all know what they stand for; namely, service, and duty well done, which means Safety. We venture the belief that hundreds of men who have served under these men were taught their lessons and are giving a good account of themselves.

"Now, these honor roll men, and others like them, are not mere accidents. They have learned their professions from the careful men who preceded them, and in turn must make the next generation of railroad men by the same process. The extent to which this is done, and the extent to which we continue it, is the measure of the degree of Safety which we shall attain."

IN the interests of greater safety, the general manager of the Pennsylvania Railroad has called particular attention to the danger of track laborers wearing protection for their ears which effect their sense of hearing. It appears that three track laborers of this road were struck and killed by an extra freight train on December 26th, on one of the divisions at a cross-over, while they were engaged in cleaning snow from the switches, and all of these men wore caps with mufflers to protect their ears. In view of this fact, the general manager has considered it necessary to issue the following notice:

"The wearing of ear mufflers by trackmen renders their hearing less acute while being worn, and while it is not desirable to prohibit the practice of wearing mufflers, foremen should be warned to pay particular attention to the men who wear them, in regard to warning the men of approaching trains. All foremen should be advised of this at once, in anticipation of the severe weather during the next two or three months."

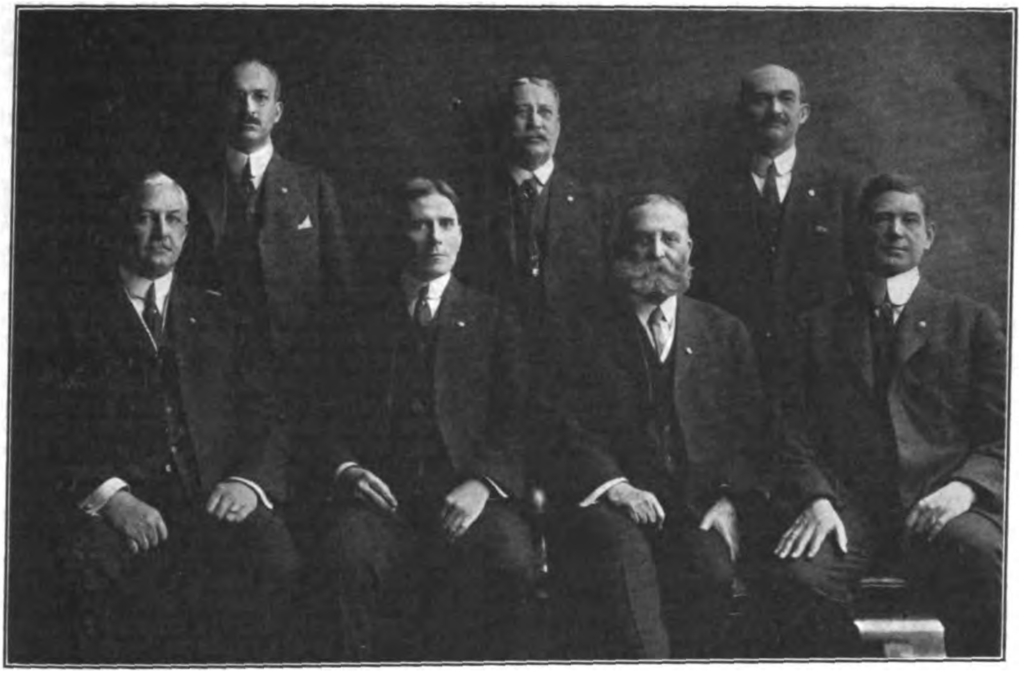
General Safety Committee of the Baltimore and Ohio.

IN our January issue attention was called to a new departure made by the Baltimore and Ohio in appointing a general safety committee who would, in the future, devote their entire time to studying the question of safety operation. This committee which is shown in the following photograph, consists of J. G. Pangborn, chairman, E. R. Scoville, for several years a division superintendent, representing the transportation department; John Hair, formerly superintendent of locomotive power, representing the mechanical branch of the service; W. McC. Bond, formerly division engineer, representing the maintenance of way department; J. T. Campbell, of several years' experience as an agent, representing the stations and traffic department; Dr. E. T. Parlett, representing the relief department of matters of sanitation, and B. C. Craig, who for the past nine years has been an inspector of railway safety appliances in the employ of the Government. There will also be an advisory committee acting in conjunction with the general safety committee.

This new departure on the part of the Baltimore and Ohio will undoubtedly be watched with interest by other carriers and it is not unlikely that the near future will see committees of a similar character organized whose duty it will be to give their exclusive attention to the matter of greater safety.

In connection with the manner in which the scope of the safety work has been broadened through the reorganization of the general safety committee, it is of interest to note the company's plans for an extensive campaign of sanitation through which it is hoped to protect the health of employes by providing wholesome working conditions, while at the same time, safeguarding life and limb. Dr. Parlett to whose charge this particular work is entrusted, is making an inspection of the restaurants of the railroad, where the traveling public and employes are served meals, and the rest-houses and other quarters at division and terminal points where employes spend their time.

The sanitary conditions of passenger trains



General Safety Committee, Baltimore and Ohio System.

Standing, left to right: Dr. E. T. Parlett, sanitation; E. R. Scoville, transportation; J. T. Campbell, traffic and station service.

Seated, left to right: John Hair, mechanical; W. McC. Bond, maintenance of way; J. G. Panghorn, chairman; B. C. Craig, safety appliances and inspection.

comes within the province of the General Safety Committee likewise, so that every effort is being made to protect the health of the traveling public. The proper ventilation of trains will receive careful attention and State laws applying to the cleanliness of trains will be enforced.

For several years the Baltimore and Ohio has maintained rigid regulations to insure the healthy condition of employes of the dining car department who handle the food served on trains. All cooks, waiters and other employes are examined by a company physician when employed and must submit to periodical examinations to show that their health has not become impaired. Such examinations are now being made by the General Safety Committee of the employes of restaurants and rest-houses. These employes are being examined by physicians and must hold certificates of health to show that they are free from contagious or communicable disease. Women employes are examined by female physicians in the employ of the company.

An educational campaign is being conducted by the General Safety Committee to impress upon the employes and their representatives on the local committees the importance of cleanliness, methods of combating the spread of contagious and infectious disease as well as matters pertaining to social hygiene.

Frisco Establishes Women's Safety League.

THE Women's Safety League recently organized by the St. Louis and San Francisco Railway, is rapidly becoming recognized as one of the most helpful and efficient branches of the safety system of that road.

The management of this League has been entrusted to Mrs. E. G. Newlands, of Augusta, Kansas, wife of a Frisco employe, and while still in the experimental stage, there is every indication that the movement will prove eminently successful. The object of the League is of course to promulgate the safety movement, bringing into play the subtle but far-reaching influences which women can exert on those whose well being is their vital concern.

The League was launched with a charter membership of one thousand, subdivided into ten divisions of ninety each and four terminal chapters of twenty-five each, representing the ten operating divisions and four terminal divisions of the Frisco. Members of the League wear badge pins, and have pledged themselves to improve every opportunity to exert their influence for Safety First, the promotion of the spirit of brotherhood among the Frisco employes, of loyalty to the company, and above all else, of duty to humanity.

North Western Wins Special Recognition for Safety Work.

ON account of a very comprehensive exhibit at the First Annual Exposition of Safety and Sanitation held in New York from December 11th to 20th, under the auspices of the American Museum of Safety, the Chicago and North Western Line has been awarded a diploma and grand prize by the Committee of Award.

The company's exhibit was located at the main entrance of the new Grand Central Palace in which the exposition was held and had for its center, a large map reproduced in the January issue of the Railway World, showing the safety organization, over which was placed a large illuminated sign showing the safety emblem in colors. The exhibit also included a series of photographs mounted on a multiplex stand, showing the right and wrong methods of doing work; four special machine models, the safety banner which has been awarded the company, also a display of literature issued by the Central Safety Committee at different times.

Southern Railway Organizes Bureau of Prevention.

THE general manager of the Southern Railway has added to his department a Bureau of Prevention, the function of which will be to study in detail the causes of accidents for the purpose of disclosing, if possible, similar conditions should they exist. The Bureau will also make an effort to devise means for temporary prevention under such conditions and to develop plans of correction for obviating the re-occurrence of any such accidents.

Safety First on the Grand Trunk Railway.

THE first meeting of the General Safety Committee of the Grand Trunk Railway, was held at Montreal on January 12th. The report of the division terminal and shop committees, showed that during December 480 employes were cautioned by members of safety committees against unsafe practices and that 500 unsafe conditions were corrected. During the last four months of 1913, with the safety movement in effect as compared with the same month of 1912, before the movement was started, there were sixteen fewer employes killed, a decrease of 50 per cent, and one hundred and fifty fewer employes injured, a decrease of 11.5 per cent. These favorable results were procured in spite of a heavier volume of traffic.

Annual Report of Police Department of Baltimore and Ohio System.

CRIMES committed against railroads are increasing, according to the annual report of the police department of the Baltimore and Ohio System, which shows that 13,129 arrests were made during 1913, as compared with 10,417 arrests during 1912. There were 8,449 convictions in 1913, while in 1912 the number of convictions was 6,515. This increase in crime added materially to the expense of the railroad for doing business during the year.

The report of G. A. Ogline, superintendent ofg police, covers all classes of criminal offenses, from petty larceny and disorderly conduct to train wrecking, highway robbery and murder. The most frequent offenders were those who "violated railroad laws," for which 8,303 arrests of tramps and others unlawfully using the railroad property were made. Arrests for intoxication and disorder numbered 2,526, with 1,567 arrests for larceny, 176 for burglary and 3 for murder. For receiving goods stolen from the railroad there were 67 arrests.

Commenting upon the large number of arrests of trespassers—tramps and other vagrants and loiterers about the railroad—Superintendent Ogline says: "It is evident that the number of persons unlawfully riding over the railroads and trespassing upon the property in other ways is on the increase, but the officials have been badly handicapped in coping with this evil on account of the lack of co-operation on the part of authorities The courts will handle a few offenders, but it is continually impressed upon the railroads' police departments that the arrests to trespassers must be held to the minimum because the cities, towns and counties are unwilling to bear the expense of harboring this class of offenders in jails and other institutions of detention. In sections of Pennsylvania, West Virginia and Ohio, however, where sentences to work on county roads and at other hard labor have been imposed, trespassing is not so general as in other territory where the road operates."

The police officials of the Baltimore and Ohio are hopeful that the Maryland Legislature will act favorably upon the recommendatiion of Governor Goldsborough, that stringent laws be enacted against trespassing upon railroad property. A report was made to Governor Goldsborough recently by the legal department of the Baltimore and Ohio, in which the difficulties experienced in operating the railroad, due to molestation by tramps and other vicious characters who steal shipments, wreck trains and commit other crimes were pointed out; and this presentation of the subject was made the basis of the Governor's message to the Legislature.

Mechanical

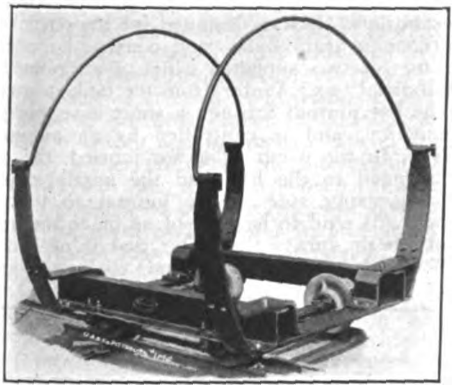
A New Car Deflector and Ventilator.

DOCTOR ROBERT S. HENRY, of Chattanooga, Tenn., has been granted a patent on a car deflector and ventilator which was invented jointly by him and S. B. Shipley of the same city. The deflector is an improvement on the dust and cinder guards used in the windows of passenger cars. It is so designed as to be removable and can be set in position at the end of the window and reversed from one side to the other. The object of the invention is to provide a simple and more efficient dust and cinder guard than those now in use. It is so constructed as to operate both as a guard and as a ventilator by causing an outward suction of air from within the car through the window to which it is applied. It consists of certain novel features of construction and a combination of parts so arranged that when the device is in position and the train is moving the current of air produced by the rush of the train comes in contact with the outer face of the guard and the cinders are carried by the current and deflected downward. The device is especially desirable for windows of smoking cars for the reason that it readily draws out the smoke from inside the car. Arrangements are being made to manufacture a number of the guards in Chattanooga after which they will be installed on passenger trains with a view to demonstrating their efficiency. The invention has been examined by practical railroad men who pronounce it one of the best devices of its kind, owing to its peculiar construction and the scientific principles upon which it works.

A Movement for the Preservation of Railroad Ties.

BECAUSE of the scarcity of suitable railroad ties railroads are either installing creosoting plants or are purchasing creosoted ties from the different private companies.

This wide demand for creosoting material has been the means of directing considerable attention to the developing of machinery for this work and the equipment has improved wonderfully within the past few years.



General Appearance of Car Used in the Process of Creosoting Railway Ties.

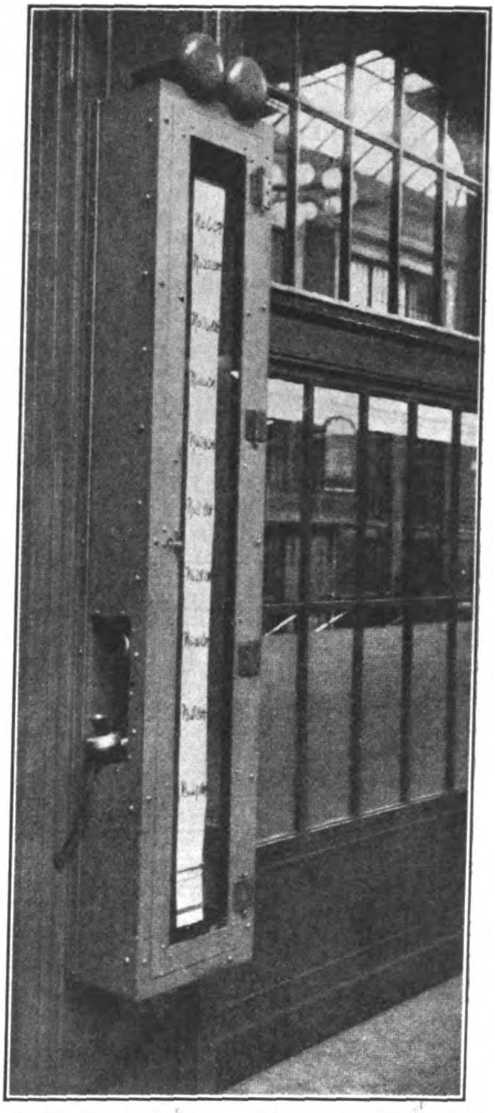
The accompanying cut shows one of the latest type of cars used for creosoting railroad ties and it will be noted that special attention has been paid to utilizing all the space possible and the end sills are dropped so that several ties can be loaded in between the side sills. The belts or bars which hold the ties on the car are provided with pivoted pins at the end, which when turned, parallel with the bars allow them to be pulled out with no difficulty and when turned perpendicular, their normal position prevents them from coming out. It has been found that because of rapid corrosion in the cars, caused by some of the solution used in creosoting, heavy bar sections are better than angles or channels. They resist corrosion, better than structural shapes and in this case the cradles are made of heavy bar to guard against any weakness in them as this would cause difficulty in operation of the equipment.

The cars shown on cut are for the creosoting plant of Charlotte Harbor & Northern Railway Co., and were furnished by the Orenstein-Arthur Koppel Company, of Koppel, Pa.

Telautographs in the Northwestern's New Chicago Station.

AMONG the many devices which have been installed in the new passenger terminal in the Chicago Northwestern Railway at Chicago for the convenience of the traveling public and the expeditious movement of trains in and out of the station is the telautograph, an electrical apparatus that is as novel as it is useful.

The telautograph, unless you were on the lookout for it, would probably escape your notice, notwithstanding the fact that there are twenty-one of them in use in the Terminal.



Telautograph Employed in the Chicago and North Western's New Station at Chicago.

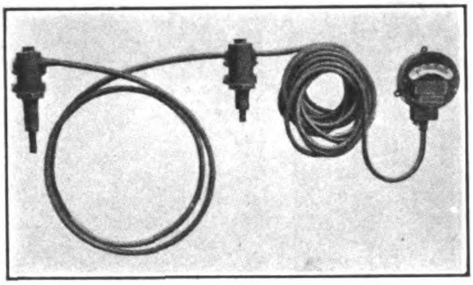
It is an automatic writing machine, that reproduces handwriting by electricity. At the Terminal they are used to advise employes as to arrival and departure of trains, and to distribute train reports from the dispatcher's office.

For example: The dispatcher's office will receive report that train No. 22 is on time. By writing this information on the device in his office, the twenty-one telautographs located at various points in the Passenger Terminal, immediately give out the same information. The mechanical arm, almost human in its operation, writes across a sheet of paper that train No. 22 is on time. Other messages transmitted in the same manner are that train so and so will arrive on track No. 11, or that train No. 512 has eleven cars.

The illustration shows the location of one of these devices in the Terminal, and also a reproduction of some of the messages which have been transmitted.

Employing the Pyrometer for Superheater Locomotives.

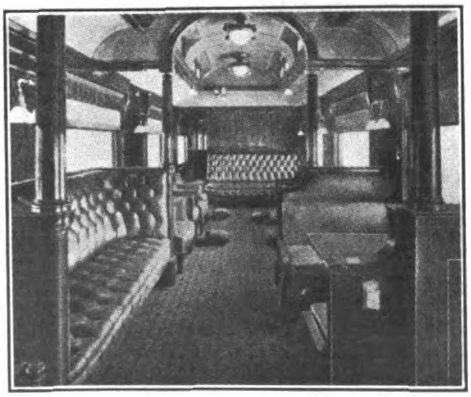
THE Locomotive Superheater Company, of New York, has developed a pyrometer for use on superheater locomotives which is said to satisfactorily indicate to the engineer at all times the temperature of the steam in the steam chest. The instrument is of the electrical type and consists of thermo couples, constructed and arranged in accordance with the Bristol system. The cold end is located in the boiler in the saturated steam and the hot end in the steam chest, directly in the flow of the superheated steam. Electrical connections are established to the indicator of the milli-voltmeter type, located on the gage bracket in the cab. The accompanying illustration gives an idea of the arrangement of the parts of the pyrometer apparatus.



PYROMETER AND ACCESSORIES CONSTRUCTED FOR USE ON SUPERHEATER LOCOMOTIVES.

Lounging Car on the Northwestern Limited.

THE accompanying attractive photograph shows the interior of a lounging car with its two spacious parlors, which is one train between Chicago and St. Paul, Minn. The car is perfectly ventilated and is equipped with of the distinctive features of the Northwestern's easy chairs and lounges richly upholstered in Spanish leather. It can readily be imagined that it makes for sociability and good fellowship, having many of the conveniences of a modern club. Close at hand is a conference room, sanitary bubbling fountain, writing desk, current periodicals and a well stocked buffet.

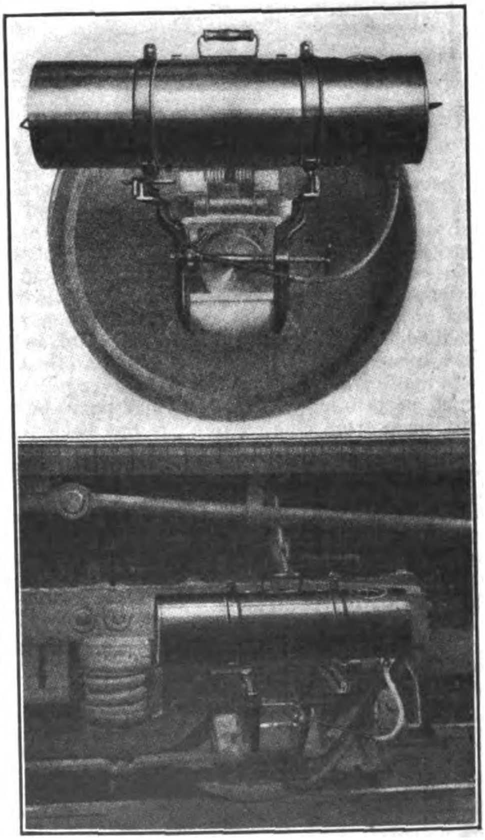


INTERIOR OF NORTH WESTERN'S LOUNGING CAR ON TRAIN RUNNING BETWEEN CHICAGO AND ST. PAUL.

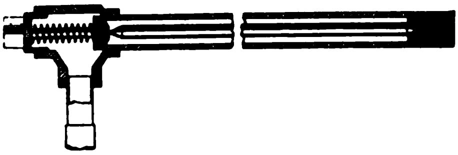
A Journal Cooler.

THE Transportation Utilities Company, of New York, has recently put upon the market a journal cooler which is claimed to be a distinct improvement on present methods of cooling journal boxes.

It is designated as the B.-J. cooler and its general appearance is indicated by the following illustrations. It was designed for the purpose of overcoming train delay and consists of a tank resting on two supports which are cammed to the journal box. Water from the tank is carried to the hot journal through a short hose and pipe connection, and is controlled by an automatic valve. In the event of a hot journal, the tank is cammed to the box and the nozzle inserted on the rising side of the journal so that the water will tend to be carried up on to the brass. This nozzle sprays the water that is needed the full length of the hot journal, cooling it grad-



TWO PHOTOGRAPHS OF JOURNAL COOLER, SHOWING MANNER IN WHICH IT IS ATTACHED TO JOURNAL BOX.



Thermostatic Valve Which Controls the Flow of the Water

ually. The thermostatic element indicated in the accompanying illustration, expands in the direction of its length, forcing back the feed valve and allowing free flow of the cooling agent to the spray pipe, thus bringing about a gradual uniform cooling of the journal and brass. The cooling of the journal causes a gradual automatic contraction of the thermostatic element by which the flow is reduced until a normal temperature is reached, at which time the flow is practically stopped. The cooler can be attached during a regular stop of two minutes.

Electrical

A Comparison Between the Gross Earnings and Operating Expenses of Steam and Interurban Electric Lines.

A BOOK by Louis Fischer, expert in electric railway economics just published by the McGraw-Hill Company, of New York, contains some interesting comparisons of recent tendencies in the gross earnings and operating expenses of steam and interurban railroads. In brief, Mr. Fisher finds that the interurban electric railways in late years have been confronted with the problem of their expenses of operation showing increases even greater in proportion to gross revenues than those complained of by the steam railroads of the country.

"The average gross revenue per mile of line on 243,229 miles of steam railroads in 1911," says Mr. Fischer, "according to the statistics of the Interstate Commerce Commission was $11,589, of which $2,708 was derived from passenger traffic. Similar statistics for electric interurban railways are not so fully available, but from the records of typical cases, which may be said to be representative of all roads qualifying as electric interurban railways under the definition hereinbefore given, the average gross revenue per mile of line is $5,130.

"While these figures are interesting from the view point of disclosing the relative earning power of steam railroads and electric interurban railways, they are of little importance on account of the different conditions prevailing in the two fields.

"The electric interurban railways, deriving substantially all of their revenues from passenger traffic sources, are limited to sections of dense population where large passenger traffic exists. Steam roads, deriving a large percentage of their revenue from freight sources, are not limited to such restricted areas, and have been located more especially for the primary purpose of developing freight traffic. Therefore, that the earnings of the electric interurban railways should be considerably higher than the passenger revenue of steam roads and considerably less than the gross revenue of steam roads is but a logical result."

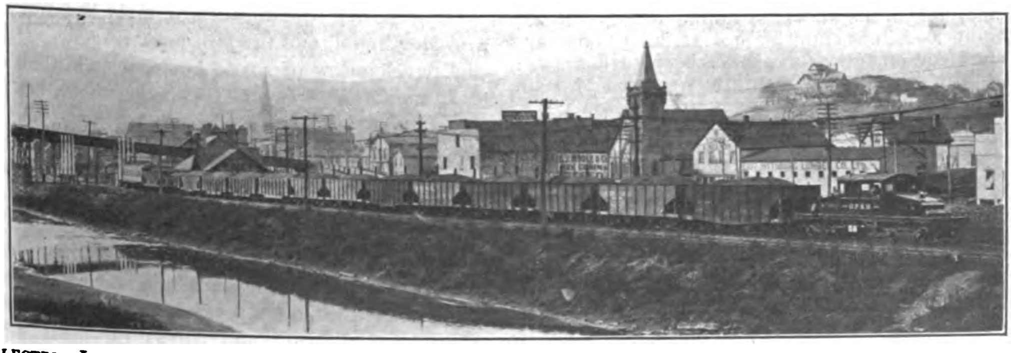
But Mr. Fischer finds that by taking the figures for both classes of roads over a period of ten years a highly significant difference in trends is seen.

"From this it is obvious," he says, "that the growth of revenue per mile of line on electric interurban railways is not keeping pace with that of steam railroads. It appears also that the operating expense per mile of line on the steam railroads has not increased as rapidly as the revenue on these lines. * * * The growth of operating expense on electric interurban railways has substantially kept pace with the growth of revenue per mile of line, with the result that the increase of net revenue per mile of line on electric railways has been very little. It was less in 1911 than in 1910.

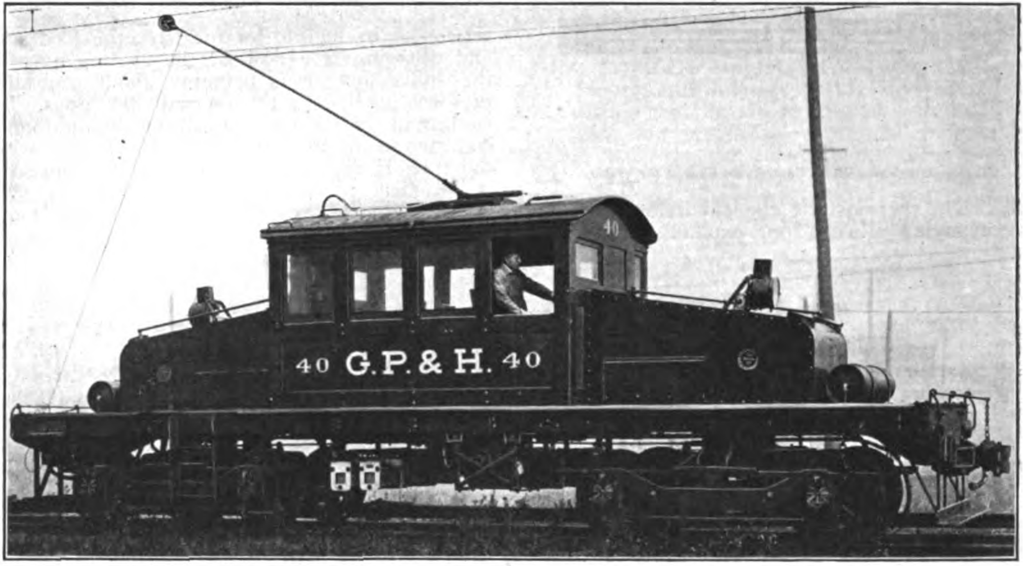
"One of the characteristics of electric interurban railways, the mileage of which has not been extended from time to time, is that the available revenue was quickly developed and that at the end of this period the revenue has increased at a very low rate."

Experiments with Electric Locomotive Service on Canadian Railroad.

THE Galt, Preston and Hespler Railway Company, Ltd., Preston, Ontario, placed the 40-ton Baldwin-Westinghouse locomotive herewith illustrated, in service on Novem-



Electric Locomotive Built by the Baldwin-Westinghouse Company Shown in the Act of Drawing Heavy Freight Trains.



Electric Locomotive Built for the Galt, Preston, Hespler Railway Company of Preston, Ont., by the Baldwin Westinghouse Interests.

ber 20th, 1910, and since that date has been in continuous operation, twenty-four hours every day except Sundays, averaging about 150 hours per week. This service includes hauling practically every kind of freight in standard steam railroad rolling stock, between the Canadian Pacific Railroad at Galt, Berlin and Waterloo, a distance of from 12 to 14 miles north.

Although the haul is not so very long there are a number of 2 to 2½ per cent grades, from one to two miles long.

The maximum number of cars hauled in one train is about 25, the average number being 15, and the tonnage per train is about 200 tons or on four trips of road service per day, 2,000 tons.

It is hardly possible to estimate exactly the total mileage as the greater part of the time, 16 hours per day, the locomotive is in switching service. No record is kept of the tonnage and mileage, but the switching mileage would easily equal half, if not three quarters, of the road service.

This locomotive is equipped with four Westinghouse No. 308-B-2 commutating-pole, 600-volt, railway motors, rated at 120 horsepower, and unit switch control.

The locomotive is given one half hour inspection every twenty-four hours, and about five or six every Sunday when making light repairs, such as applying brake shoes, changing wheels for tire running and inspection of motors, air-brakes, and control equipment. Tires have been turned twice since this locomotive went into service and the total repair account to date is given below:

Air compressor (principally due to armature and field trouble due to low trolley voltage)	170.00
Tire turning	45.00
Motor axle bearings	30.00
Unit switch control	50.00
Trolley parts, wheels, harps, poles and bases	110.00
Brake shoes	270.00
Miscellaneous	30.00
Total (from Nov. 30, 1910, to July 14, 1913)	$705.00

The total, $705.00 for repairs on this locomotive covering a period of over 2½ years is considered a very good record by the operating company in view of the large amount of service received.

Progress in Western Electrification.

By Albert Marple.

IT is the belief of many of the electrical men in the Western part of this country that the next decade will see half of the railroad mileage west of and through the Rocky Mountains, that are now propelled by steam, under electrical operation. This decision has been reached after a careful examination and study of the present railroad situation. At the present time the Southern Pacific is steadily electrizing lines entering and contiguous to important terminals, the Santa Fe has broached a plan for the electric operation of trains on a portion of its system in the inter-mountain country, the Chicago, Milwaukee and St. Paul is engaged in the application for hydro-electric power to 440 miles of main line track in the Northwest, and the Hill lines are now starting the development of 40,000 horsepower in the Cascade mountains. Coupled with these facts are the plain truths that coal and oil are increasing in price, while electric power, especially of the hydro-electric variety, is getting cheaper. This statement is proven by the report of Electrical Engineer Babcock, of the Southern Pacific, to the effect that the electrizing of the line over Tehachepi Pass would effect a saving in fuel amounting to $140,322 a year for that line. Since the vast California and Texas oil fields were opened oil has been generally used for fuel in that Western country. It is claimed, however, that cheap oil is a thing of the past. An evidence of this action of the Kansas City Southern, when placing an order for locomotives, in contracting for coal burners rather than oil consumers. This action is generally considered as premonitory of the change in power of all oil-burning roads. It is very probable, however, that the change in power, especially where hydro-electrical energy is available, will be from oil to electricity rather than from oil to coal.

Notwithstanding the fact that the Southern Pacific Company has been the pioneer in the work of changing from oil to electrical power, its activities in this line have been veiled by the organization of subsidiary companies to do the work. For instance, in the southern portion of California, the Pacific Electric, which is a Southern Pacific property, is now operating much mileage that was formerly under steam operation. In the San Francisco Bay district, the Oakland, Alameda and Berkeley, the Peninsular Railway Company and the San Jose Railway Company are doing a work similar to the Pacific Electric. In the San Joaquin Valley, the Visalia Electric is acquiring and electrizing some Southern Pacific mileage. While all of these roads are doing building on their own account, this work would doubtless have to have been done by the Southern Pacific if that company would keep its grip on the increasing traffic units of the State.

The Portland, Eugene and Eastern Company, as a subsidiary of the Southern Pacific, is probably doing the most characteristic piece of electrizing of that company's line in and about Portland. The lines to be electrized in that section will total 340 miles, and the cost of this work is estimated at $12,000,000. Included in this is the building of new lines through the Williamette Valley, in addition to electrizing two Southern Pacific branch lines and two steam roads which were purchased. In main-line electrization the ever-progressive Southern Pacific is considering three outlets from the great central valleys of the State, south of the Tehachepi Pass, north over the Siskiyou Mountains and east of the Sierra Nevadas, as strategic points from which to start. At a recent date Electrical Engineer Babcock, of those roads, made investigations as to the feasibility and possibility of doing this work. On account of the high market on bonds he is not optimistic so far as possibility is concerned, but he thinks the work is very feasible.

In regard to these proposed improvements some figures from Mr. Babcock's estimate may be of interest. The first cost he estimates at $7,172,600, which would be reduced to $5,707,700 by the credit obtained from the release of steam locomotives for use on other portions of the system. Included in his estimate are $2,085,000 for electric locomotives, $1,760,000 for a generating station, $1,610,000 for sub-stations, $980,250 for a contact system and $430,050 for a transmission system, the remainder being for minor improvements, such as block signals, shops, inspection sheds, etc. In this estimate the annual operation cost is set at $721,519, as against $687,032 for the present steam power, but Mr. Babcock's figures include $256,847 for bond interest. Deducting this the total operating cost under electricity would be $464,672, or $222,360 less than the present steam operating costs. Of this amount a saving of $140,322 is ascribed to the change of fuel.

Although the Santa Fe is not committed to electrization, that company has just been interested in a plan to harness the waters of the upper Arkansas River. Business and farming interests broached the plan, stating that they would be willing to share in the expense, the Santa Fe to take half of the power for train operation, while they took the remainder for commercial use.

Electrization work on even a larger scale than these just mentioned has been started by the Chicago, Milwaukee and St. Paul Railroad between Avery, Idaho, and Harlowton, Mont., a main-line distance of 440 miles. C. A. Goodnow, assistant to the president of this road, stated recently that the work undertaken by his company is the most general electrization yet undertaken by any steam road and undoubtedly foreshadows the electrification of the entire line from Harlowton to the Pacific Coast, a main-line distance of 865 miles, including the line to Tacoma. It is understood that the power for this long line is to be furnished under long-term contracts with the Montana Power Company and the Thompson Falls Power Company. It is planned that eventually a large power plant at Great Falls, Mont., is to be constructed, this to generate 100,000 horsepower. This, with the power from the other plants, will form one tremendous reservoir of electric energy from which to draw any amount of power necessary to operate the railroad. The intention is to do all work, including switching, inside the electrical zone, with electric locomotives. It has been determined that a single freight locomotive is capable of handling 2,000 tons trailing one a one per cent grade and two the same tonnage on a two per cent grade at a speed of from fifteen to eighteen miles an hour.

Mr. Goodnow also states that electric locomotives can make from 200 to 300 miles at the outset and there will be no delays on the road for coal, water or cleaning fires and it is a fair conclusion that the tonnage will be handled with fewer locomotives at higher average speed and with a regularity that will give greater satisfaction to shippers and passengers.

A little information as to the changed duties of the dispatcher under electric operation, is here given:

"As the dispatcher will have only 20,000 kilowatt hours available at first he must figure to move his traffic and not use electrical energy in excess of that amount. To this end he not only must have the entire situation clearly before him so that trains will not be started from termini at hours when they will be unreasonably delayed into intermediately waiting for current, but he must supervise their speed since the speed of trains on ascending gradients exactly represents electric energy used. In order to push an important train across a mountain range at maximum speed it may be necessary for the dispatcher to slow down other trains or he may order one or more trains to move at maximum speed to provide for the prompt movement of subsequent trains. A train making a given distance in one hour will use the same total electrical energy if it makes the run in twenty minutes. In other words, if a run is made at a speed of 7½ miles per hour the same total number of kilowatts will be used as if the run is made at the rate of fifteen miles per hour. While twice the amount of current is used at the higher speed it is used only half the time."

Terminal Improvements

Reconstruction of North Philadelphia Passenger Station.

AS a part of the comprehensive plan of improvements the Pennsylvania Railroad is providing in and around Philadelphia the Board of Directors has authorized the reconstruction of the North Philadelphia passenger station. This is in addition to the work which has already been authorized at that point and which is nearing completion.

It was because of the growing importance of North Philadelphia as a station for through trains as well as the very large increase in the number of Philadelphians using this station for New York and Atlantic City trains that the Pennsylvania Railroad decided to enlarge the facilities and conveniences for passenger trains at that point. Eight tracks four of which are for passenger trains two for eastbound and two for westbound trains are now being completed. Ornamental concrete bridges to carry eight tracks have been built over the Philadelphia and Reading Railway and over Broad street.

Two island platforms one of which is completed and in use will be used by passenger trains, so that four trains, two in each direction, can stop there at one time. These platforms are all at the level of the train floors. This is the first station to be so constructed following the Pennsylvania Station in New York City, and Manhattan Transfer.

To avoid delay to freight trains because of these enlarged passenger facilities, two additional freight tracks will be provided in the vicinity of North Philadelphia station.

The improvements and facilities at North Philadelphia provide for rebuilding the basement and present train floor of the station, so that the ticket offices, baggage room and entrance lobby will be located on the present basement floor at about the same grade as North Broad street and the present subway under the tracks leading to the island platforms.

This will eliminate the necessity to use any stairway except those leading to the island platforms. The present train floor level will provide space for a large waiting room, retiring room and lavatories, and probably a lunch room.

In order to make room for these improvements it will be necessary to build a new power house for housing the heating plant and other machinery now located in the basement of the station.

With tracks now building, the Pennsylvania Railroad Company will have 544 miles of track inside of the city limits of Philadelphia, 31 passenger stations, 24 freight stations, and 10 riverfront stores, flour and hay houses.

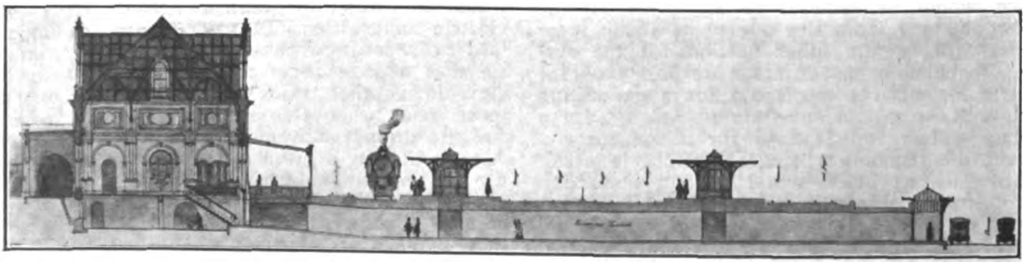
Records show that during the past year this company received and dispatched at Philadelphia approximately 2,500,000 freight cars, and there arrived and departed 25,000,000 passengers. One million pieces of baggage were checked at Philadelphia stations.

The Pennsylvania Railroad operates in and out of Broad Street Station 492 trains regularly each day, besides 48 trains serving Philadelphia at stations other than Broad Street, and 105 trains handling mail in and out of Camden. There are 345 trains handling mail daily and out of Philadelphia proper on the Pennsylvania Railroad, of which not less than 95 per cent are equipped with complete facilities for assorting mail en route. These trains bring into and carry out of Philadelphia about 500,000 pounds of mail every 24 hours.

In 1913 the company collected a total of $27,592,961.07 in Philadelphia on account of freight and passengers. It expended in operations in this city $24,371,441,—not including dividends and interest on bonds, or similar general disbursements. The Pennsylvania pays out in Philadelphia for salaries and wages alone upwards of $16,000,000 a year.

The company, with other railroads, will participate in the very large expense designed to improve the industrial possibilities of South Philadelphia. It is also just completing a large, modern grain storage elevator at Girard Point, at a cost of upwards of $1,200,000. The Pennsylvania Railroad has, during the past ten years, expended in improvements in Philadelphia more than $17,000,000.

These figures give some idea of the enormous business which the Pennsylvania Railroad handles in Philadelphia. It was to provide facilities to accommodate this traffic that the company determined to electrify its suburban lines to Paoli and to Germantown and Chestnut Hill, to provide at Broad Street Station for an electric suburban service, to replace with a five-track structure the old two-track bridge over the Schuylkill River at Girard avenue, and now to rebuild and enlarge its facilities at North Philadelphia, which recently has become of very great importance as a passenger station.



GENERAL OUTLINE OF THE PENNSYLVANIA RAILROAD'S IMPROVEMENTS AT ITS NORTH PHILADELPHIA PASSENGER STATION.

New Freight Station for Pennsylvania Railroad.

ON February first, the Pennsylvania Railroad opened a new freight station in New York at Pier 22, East River. The design of the Pennsylvania in opening the new station is to make its facilities more accessible. All of the down-town freight facilities have heretofore been located on the North River side of Manhattan Island, making it necessary for shippers on the East Side to haul freight across the town.

For the convenience of business men in Harlem and the upper part of the East Side, the compnay will continue to maintain a freight station at the foot of 125th street, East River.

The Southern's New Joint Freight Terminal at Macon.

SPLENDID facilities for handling both carload and less-than-carload lots very expeditiously have been recently provided by the new joint freight terminal of the Southern Railway, the Georgia Southern and Florida Railway and the Macon and Birmingham Railway. This terminal consists of separate inbound and outbound freight warehouses each 492 feet in length, together with two covered transfer platforms, and served by seven tracks accommodating seventy cars. The cotton platform is 250 feet long and team tracks for the delivery of bulk freight accommodate one hundred cars. Three paved drives have been laid to serve warehouse and team tracks. In addition to these facilities, the Southern Railway has recently completed and placed in service a new yard at Macon which has greatly improved the handling of business in Macon proper and through Macon.

The new joint facilities are of such a character that they not only provide for the present freight traffic at Macon, but anticipate the great growth of business which is hoped for in the near future.

Terminal Improvements at Chattanooga, Tenn.

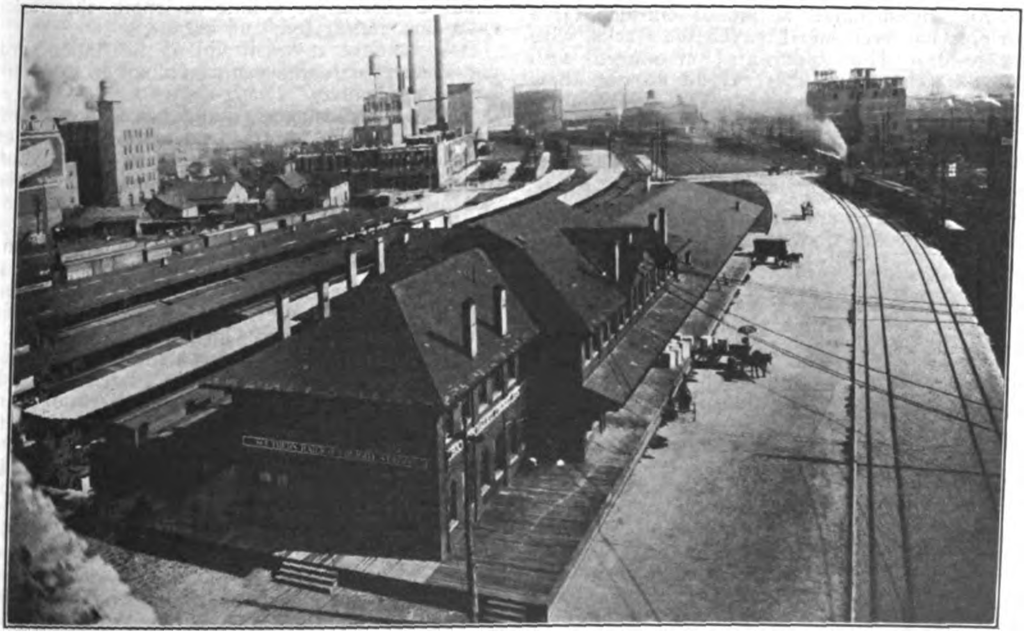
ONE of the most notable improvements made by a transportation company in the South recently is that of the Southern Railway, at Chattanooga, Tenn. To meet the demands of increasing business at that point, the Southern has spent, roundly, $125,000 in extending and making thoroughly modern its freight terminals. All of this amount, except a few thousand, was used in developing the terminals shown in the accompanying illustration, covering some fourteen acres.

As a result of the improvements, patrons of the Southern in Chattanooga—including about 60 jobbing houses and nearly 300 manufacturers, such are the industrial and commercial proportions of the city—now enjoy the benefits accruing from one of the best stations of its kind in the South. Tracks serving the inbound and outbound freight houses afford sufficient space for the loading and unloading of 100 merchandise cars daily. Public team tracks afford space for placing 50 cars for loading and unloading.

Considering the features of the freight terminals under the improved conditions, and from left to right in the illustration, they are: Pillar crane on platform alongside track for handling machinery and other very bulky freight; automobile unloading platform; driveways for drays unloading freight to outbound station; outbound station; tracks for outbound freight; tracks for inbound freight; inbound freight station; drive way, and main line of freight tracks.

The outbound freight house is an entirely new building, while the inbound freight house is the old structure, remodeled and repaired adequately. In the instance of both, an unoccupied space has been left at the eastern extremity so that as soon as future growth of business warrants, they can be extended.

The permanent and finished character of all improvements cannot fail to impress anyone making



NEW FREIGHT TERMINALS AT CHATTANOOGA, TENN.

an inspection of the terminals. For the paving of driveways and that part of King street occupied by the tracks, a six-inch concrete base was laid, surmounted by a two-inch sand bed, and topped with a four-inch brick course. The new station, 34 feet by 250 feet, has a foundation of 24-inch concrete walls and six-inch concrete granolithic flooring. The framework is of steel. The two-inch concrete roof is covered with a composition roofing. There are no side walls, the only enclosures being rooms for check clerks and a small over-freight locker room. The platform is equipped with three dial scales and one beam scale. All buildings are provided with standard fire hydrants, of which there are two in each depot and three on each platform.

Two frame platforms have been constructed, each 14 feet wide, one being 528 feet long, the other 517 feet. They are built on concrete piers, and have composition roofing. The framework is wood, this material being chosen because the ground in the vicinity is surfaced with cinders which produce fumes very destructve of steel. The timbers are of long leaf yellow pine.

A brick pavement, averaging 35 feet in width, by 115 feet long, is the approach to the platform which supports the 15-ton hand power pillar crane, this being laid on massive reinforced concrete foundation. Next adjoining, a tar macadam pavement, averaging 32 feet in width, and 200 feet long, approaches an automobile platform 80 feet by 16 feet, onto which automobiles can be unloaded from cars and run to the ground on an inclined plane, with easy access therefrom to the city streets.

All tracks were laid with 80-pound steel and provided with latest improved switches. At the end of each track is a steel bumping post, anchored not only to the rails but five feet in the ground, and supported on concrete foundations. Each of the paved driveways has its own sewer and drains. Surface water is carried off immediately. Wherever two adjacent tracks run parallel for any distance, a line of six-inch terra cotta pipe has been laid between the tracks, with open joints. The joints are surrounded with cinders which act as filterers and do not allow soil or other solids to pass into the sewers. It is a safe assertion that these yards are the best drained of any in the South.

The work of construction was under direct charge of S. D. Moses, assistant to the district engineer of the Southern Railway. Very little contract work was done.

Extensive Passenger Yard Facilities at Minneapolis.

THE Chicago, St. Paul, Minneapolis and Omaha Railway, one of the Chicago and North Western Lines, has just completed an immense passenger terminal yard in Minneapolis at a cost of $2,000,000.

It covers twenty-one acres of ground and has, in addition to its vast trackage space, a modern thirty-stall roundhouse, up-to-date machine shop, boiler room, engine room, boiler washing plant, lavatories and rest rooms for the employes, store house, water system and pumping station, heating apparatus, double cinder pit, and an automatic coaling station. These facilities make this yard one of the most modern in the West.

Every piece of machinery in the plant is electrically operated, with the exception of the two turbine generators.

The roundhouse is equipped with all labor saving devices known, even including compressed air for operating lifts and for boiler cleaning. The boilers are of the latest smoke-consuming type and are automatically stoked and regulated —not one pound of fuel being handled with a shovel. Even the ashes are disposed of without inconvenience of any kind. They drop from the grate into hoppers which dump directly into gondola cars.

The rest rooms and lavatories for employes are modern and sanitary, and a deep well supplies an abundance of pure, soft water.

The Great Northern's New Passenger Terminal at Minneapolis.

THE new $2,000,000 Great Northern Railway station in Minneapolis, Minnesota, which was opened for service January 22d, is the final word in modern model terminal construction. It stands on the river-front facing Hennepin avenue. The station is built according to the following general arrangement:

Main building with entrance on street level; waiting room, 62 x 155 feet and concourse 252 x 50 feet, on street level, with stairways and elevators leading to train platforms.

Twelve through tracks served by six platforms with "butterfly" type train sheds.

Overhead trucking gallery for handling baggage, mail and express, with elevators leading to all platforms at far end of station, so that baggage trucks are never in the way of passengers. These baggage trucks are driven by electric power and they are rubber tired, which will make the handling of baggage almost noiseless.

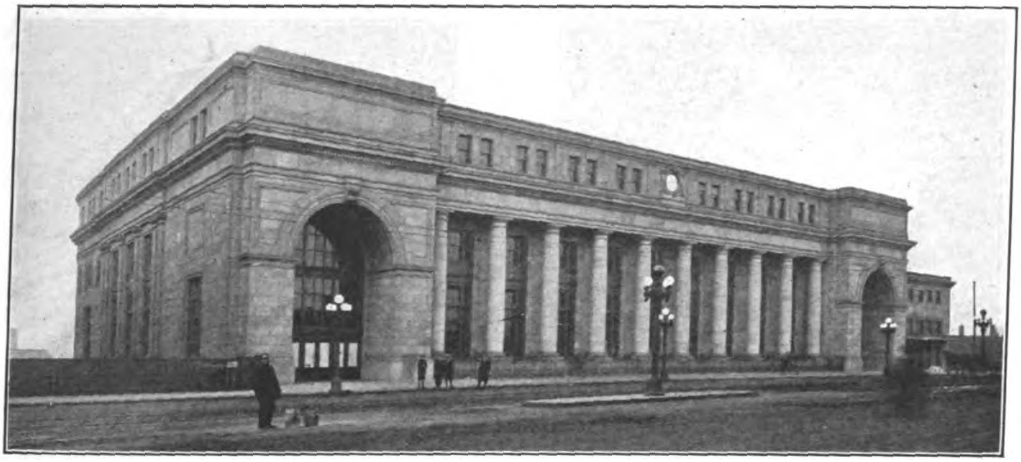
Mail and Express Building on site of old station (across street from station) the two connected by trucking galleries. This makes a terminal a quarter of a mile in length, the tracks extending under Hennepin avenue.

Power house at north end of the station yard and connected to the main buildings by an overhead "pipe gallery."

The mail and express building is now being built on the site of the old station, razing of which was begun the moment the new station went into service. This new building will be 300 feet in length, facing on High street and Hennepin avenue.

Six roads use the new Great Northern station: The Great Northern, Northern Pacific, Great Western, Chicago, Burlington and Quincy, Chicago and North Western and the Chicago, St. Paul, Minneapolis and Omaha.

The exterior of the new station is of tooled Kettle River sandstone from the quarries in Sandstone, Minn. The trucking galleries and stairs to the train platforms are of reinforced concrete construction. The power house and stack exterior are of brick. The only wood used in construction was in doors and narrow casings. Entrance and inner vestibule floors are of art marble tile. The walls are wainscoted with Tennessee marble. Door frames and booths around the waiting room are of ornamental cast iron. The women's retiring room has an art marble floor, with wainscoting of mottled gray Vermont marble. The smoking room has DeSmet marble cement floor tile, with Tennessee marble wainscoting and the



FRONT VIEW OF THE GREAT NORTHERN'S NEW PASSENGER TERMINAL AT MINNEAPOLIS.

dining room (on second floor) has a marble tile floor and Vermont marble wainscoting. On the second floor are the offices of the chief train dispatcher, his assistants, division superintendent and station officials. The third floor is to be used for storage purposes.

A novelty in the new Great Northern station is the ventilation of the big building. Water washed air is poured into the waiting room by means of enormous fans, while at the same time the vitiated air is removed by exhaust fans, and the temperature is kept even. During the summer the air will be cooled to a refreshing temperature by ice and pumped into the station at the rate of 35,000 feet a minute.

The main waiting room and train concourse are lighted by large ornamental chandeliers with tungsten units. In the new depot, Minneapolis people are given their first sight of recessed lights at the base of all stairway landings, minimizing mis-steps in going down these stairways.

The electrical equipment of this new Great Northern station is the finest in the Northwest, as well as the most extensive. More than eleven miles of galvanized iron conduit was used, and more than 25 miles of rubber covered wire. All of the wire used in this installation is of a quality better than the standard adopted by the National Board of Underwriters, the insulation being 30 per cent pure Para rubber.

More than 500 switches are used for controlling the various lighting circuits in addition to which there are a number of remote control switches for controlling groups of lights from various remote locations in the station. All of the remote control points have small lamps back of a bull's-eye lense to indicate if the lights located at a remote point are burning, or are cut off.

The power house, for furnishing the light, heat and power to the station, is located approximately 1,000 feet north of the building, the wires for supplying light and power and the steam for operating pumps and for heating purposes being carried through an aerial passage-way connecting the two buildings.

The generating plant consists of two simple and one compound engine being directly connected to two 250-kilowatt and one 350-kilowatt direct current 220 volt generators, making a total of 850 kilowatt, or approximately 1,200 horsepower. The switchboard for the control of this machinery consists of a 6-panel slate board 15 feet long, located along the west wall of the engine room. This is equipped with all the latest instruments for determining the voltage of the generators, the load under which they are operating, and the total amount of current supplied to the building during any given interval.

All of the electrical equipment, including generators, switchboards, panel-boards, conduit and wiring, was installed by the Minneapolis Electric Equipment Company.

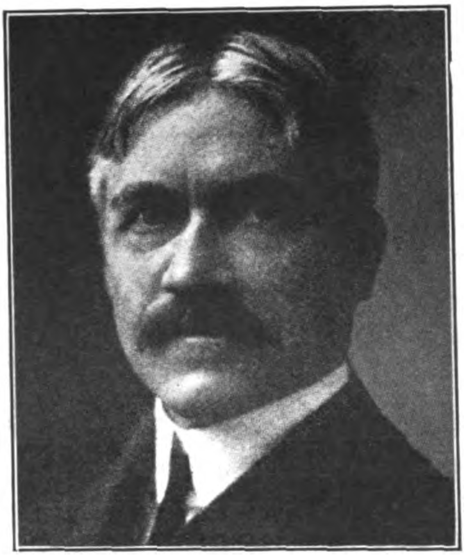
Interstate Commerce Commission

President Wilson Fills Vacancies on Commission.

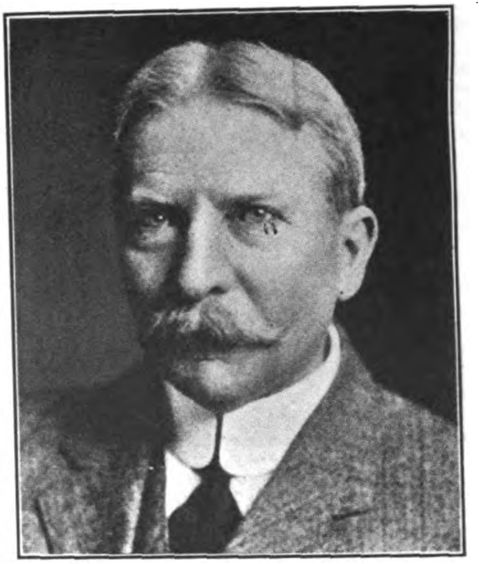
PRESIDENT WILSON has filled the two vacancies on the Commission by appointing Henry Clay Hall, of Colorado, and Winthrop M. Daniels, of New Jersey, to these important positions.

Mr. Daniels has for the past three years been a member of the Board of Public Utilities of the State of New Jersey and for more than twenty years, he was Professor of Political Economy of the Princeton University, of which President Wilson was president. Mr. Daniels was born at Dayton, Ohio, in 1867, and graduated from Princeton in 1888. When Mr. Wilson became Governor of New Jersey in 1911, he appointed Professor Daniels to membership on the Board of Public Utilities of that State, which position he has held until his present appointment. He is the author of "The Elements of Public Finance," and has lectured considerably on this question and upon railway economics.

Henry Clay Hall, the other commissioner appointed by President Wilson, was born in 1860 in New York City. He graduated from Amherst



WINTHROP M. DANIELS.

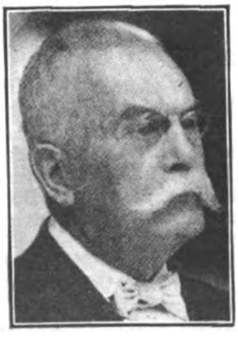


HENRY CLAY HALL.

College in 1881 with the degree of A. M. and from Columbia Law School in 1883 with the degree of LL.B. He was admitted to the practice of law in New York in 1883. From 1885 to 1892 he practiced law in Paris, France, and during part of this period from 1888 to 1892, he was also counsel to the United States Legation. Upon returning to America, he located in Colorado Springs, Colo., and later became general attorney for the Arkansas, Louisiana and Gulf Railway. He was also general counsel for the Colorado College at Colorado Springs and many other corporations. Mr. Hall was elected Mayor of Colorado Springs in 1905, which office he held for two years. He has lectured on law at Colorado College and was president of the Colorado State Bar Association from 1911 to 1912.

Frederick F. Shaller, who has been appointed signal engineer of the safety appliance division of the Commission, was born in Massachusetts in 1872. He is a graduate of the Massachusetts Institute of Technology, having completed an electrical engineering course at that institution. He then became engaged in electrical construction work and took a position with the Boston and Albany, being engaged in signal work in various capacities from daughtsman to foreman of construction. In 1902, he became assistant signal engineer of the Lake Shore and Michigan Southern and for the two following years, was employed in engineering work connected with the first installation of continuous automatic block signals on the Lake Shore. Since 1904, he has been employed in the engineering department of the Hall Switch and Signal Company.

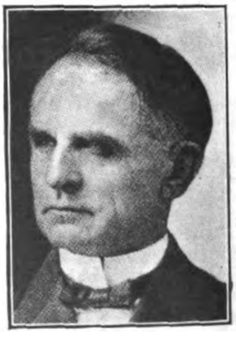
James E. Howard, who has been appointed engineer-physicist on the safety appliance division of the Commission, was born in Massachusetts in 1851. In the early 70's he was employed as civil engineer for the State of Boston, and in 1873, became engaged in engineering work in connection with the location and construction of the St. Paul and Pacific now the Great Northern. From 1874 to 1879, he was employed at Chicopee, Mass., as a mechanical engineer in the construction of testing machinery and engaged in conducting experiments connected with the testing machines now at the Watertown arsenal. In 1880, he became engineer of tests of



JAMES E. HOWARD.

ARTHUR BENTON PUGH.

F. F. SCHALLER.



ORVILLE F. BERRY.

that arsenal and from 1910 until his present appointment, he has been employed as engineer-physicist of the Bureau of Standards at Washington. Mr. Howard is a member of the American Society for Testing Materials and has also been given the honorary degree of Master of Science by Dartmouth College.

Arthur Benton Pugh has been appointed examiner-attorney for the Commission. He was born in Virginia and is a graduate of the University of that State, having been admitted to the bar in 1878. In 1897 he was appointed assistant attorney for the Interior Department at Washington and was special assistant to the attorney-general of the United States from 1906 to 1910. Mr. Pugh was appointed attorney to the Interstate Commerce Commission in September, 1910, which position he held at the time of his recent promotion.

Orville F. Berry, of Illinois, has been appointed examiner-attorney for the Commission. He was born in 1852 in Illinois, and since 1876 has resided in Carthage of that State. He was admitted to the bar in 1877, and in 1884, was elected Mayor of his own city, and served as such ten years. In 1888, he was elected to the State Senate and was a member of that body for twenty years. From 1896 to 1900, he was attorney for the State Insurance Department of Illinois and from 1900 to 1904, acted as special attorney for the State Department of Justice. In 1909, he was appointed chairman of the Railroad and Warehouse Commission of Illinois and served in this capacity until his recent appointment to the Interstate Commerce Commission.

R. D. Rynder.

R. D. RYNDER has been appointed chief examiner for the Commission. He was born at Altoona, Pa., July 3, 1882, and was graduated from the High School at Erie, Pa., in 1898. After doing clerical work for several years he entered the Indiana University at Bloomington, Ind., and completed the academic course in the spring of 1904. In the same year he obtained a clerkship, by competitive examination, in the Civil Service Commission, at Washington, and on December 5, 1904, was transferred to the Interstate Commerce Commission as clerk in the office of the assistant secretary of the Commission, Mr. Decker. After a few months he was appointed chief clerk of Mr. Decker's office; and on July 1, 1907, was appointed private secretary to the chairman of the Commission. While holding these positions he studied law at the National University, and was graduated in the spring of 1908, receiving the medal awarded for the highest standing during the course. On July 1, 1910, he was appointed attorney and special examiner for the Commission. In 1911, 1912 and 1913, he acted as a member of the Commission's Board of Review, Board of Suspensions, and Board of Reference. In his new position of chief examiner he has general supervision of the assignment of cases for hearing and of all the legal work of the Commission, except that performed by the Commissioners personally, and the trial in courts of suits to set aside or annul orders of the Commission, which is conducted by the solicitor of the Commission.

R. D. RYNDER.

J. Beaumont, signal engineer of the Chicago Great Western, has been appointed senior signal engineer, board of valuation engineers, Interstate Commerce Commission, for the third district, with headquarters at Chicago, effective February 1st. Mr. Beaumont was born in Staffordshire, England, August 10, 1874, and came to the United States when fourteen years of age. Later he began railway work as machinist's apprentice in the Mott Haven shops of the New York Central & Hudson River and in three years became a journeyman machinist. Subsequently he was stationary engineer in the Grand Central Station, New York, resigning in 1898 to enlist in the army for the war with Spain. In 1899 he went to the Standard Railway Signal Company, being made foreman in 1901 and general foreman the following year. He returned to railway service in 1904 as assistant supervisor of the Western division of the New York Central, and a year later was made supervisor at Buffalo. He then became connected with the General Railway Signal Company in 1906 as assistant engineer of sales and installation, and the next year was made supervisor of interlocking of the Atlantic Coast Line. In 1908 he went to Panama as signal engineer of the Panama Railroad, and two years later he returned to the United States to become signal engineer of the Chicago Great Western, which position he now resigns to become senior signal engineer with the board of valuation engineers, as above noted.

The Rate Advance Hearings.

AT the opening on February 19 of the hearing of protests against the proposed higher rates on plaster, Commissioner Harlan made the following statement:

The action of the Commission on Monday last in further suspending, until September 12, the proposed increased rates involved in this case seems to have been misunderstood by those not familiar with the practices of the Commission. It may be well, therefore, for me to say that the order then entered has no significance beyond the fact that the case is not yet ready for decision. Recognizing the public importance of an early disposition of the problems before us here, the carriers, shippers, and the Commission are using every effort to bring the inquiry to an early conclusion, and there is reason to think the record on the main issues in the case may be closed and the arguments had in time to enable the Commission to dispose of those questions before the summer recess.

There is another matter that I wish to speak of this morning, and in order that it may be clearly understood by those who have not been able to follow the progress of our hearings, it may be well again to explain that the Commission has before it here two subjects of inquiry, namely:

(a) Are the present revenues of the carriers adequate?

(b) It not, how may they be supplemented?

With respect to the first of these issues, the carriers have already offered much testimony, but their witnesses have not been cross-examined, nor have the investigations by the Commission on that question been completed. We are also advised that certain shipping interests will submit important testimony touching the adequacy of the present revenues of the carrier. In aid of an understanding of the first question and of a proper solution of the second question, the Commission, as I explained at a recent hearing, has also addressed certain inquiries to the carriers which they have not yet been able fully to answer. Pending the preparation by the railroads of their replies, we have been hearing the protests of shippers agaist the proposed increases in the rates on certain particular commodities in which they deal or are otherwise interested. A hearing was also had on February 12, 13, and 14 regarding the propriety of a charge by carriers for certain special services that are now performed by them without charge in addition to the published rate. At that hearing testimony was offered by the railroads and large shippers regarding the following free services:

1. Trap or ferry car service.
2. Placing cars for loading or unloading on sidings serving industries.
3. Free lighterage.
4. Tunnel deliveries in Chicago.
5. Storage free and at unremunerative rates.
6. Reconsignments and diversions in transit.
7. Free holding of equipment under load at New York terminals beyond the customary free time allowed at other terminals.

A hearing will be had in Washington on February 27 and 28 to consider further the question of making a charge for spotting cars for loading and unloading on private spur and side tracks, for the trap or ferry car service, and for the tunnel and lighterage services in Chicago. It is expected that the final arguments upon these subjects will be had before the full Commission at Washington on March 16 and 17.

Our records disclose that there are some 25,000 private spur tracks and sidings in the territory east of the Mississippi River, and, manifestly, it is neither desirable nor possible to examine in detail each one of these operations. But typical examples of the different classes of private spur and switch tracks will be helpful in enabling the Commission to determine:

1. The propriety of a charge by carriers in addition to the rate, for the spotting and trap car service.
2. The amount of the charge and the manner in which it should be assessed.

While the general conditions in this regard at Chicago were outlined at the recent hearing, further testimony is desired, and the commercial interests of Chicago that have already participated in these proceedings and others that desire to do so, are requested to come together promptly in conference among themselves in order that at the approaching hearing the Commission may have further details respecting private spur and switch tracks by means of illustrative cases. The commercial interests of Detroit, Cincinnati and Indianapolis are also requested to come together in conference in order that they may be represented at the next hearing by witnesses who will be able, by means of illustrative cases, to advise the Commission of the conditions existing at those places. So far as the time permits representatives of other cities will be heard; valuable testimony has already been given bearing upon the situation at Buffalo. The Commission will itself undertake, through its examiners, to make an appropriate record of conditions at smaller towns and villages in the territory involved.

The conditions developed in this way in respect of these matters at Chicago, Cincinnati, Detroit, Buffalo and Indianapolis, together with a report of typical spur-track conditions in villages, towns and the country districts, will probably be sufficiently illustrative as to give the Commission a broad view of the general conditions in this regard throughout the territory east of the Mississippi River.

At the hearing on February 27 and 28 none of the services to and from and within industrial plants of the general character described in the Industrial Railways Case will be further considered. But throughout the territory the spotting service is performed by the carriers to coal yards, lumber yards, elevators, warehouses and factories, by placing cars for loading and unloading at particular points on the private spur tracks leading to them, in accordance with the requirements of the shipper. There are some complex spur track situations, properly coming within the scope of the hearing, such as the spur tracks of Larkin and Company at Buffalo, fully described at the hearing of February 14. There, as it appeared, four spur tracks extend into a large storage warehouse of that company, on the ground floor of which are the loading and unloading platforms. Each of these tracks will accommodate 15 cars. One is used exclusively for inbound freight, the other three being used for loading outbound freight. The tracks are drawn by the carriers at a definite hour every morning, after which they are again filled with empty cars. For the purposes of the hearing this and similar situations are not to be regarded as industrial plant railways, but simply as private spur tracks and switch tracks. Less complicated examples of private spur tracks are to be found throughout this territory, including the simplest form in the small villages and in the country districts. Illustrative cases of these various classes of tracks, upon which the carriers perform the free spotting service, will afford the Commission an ample record upon which to set for argument the question of the propriety of an adequate charge by the carriers for the service.

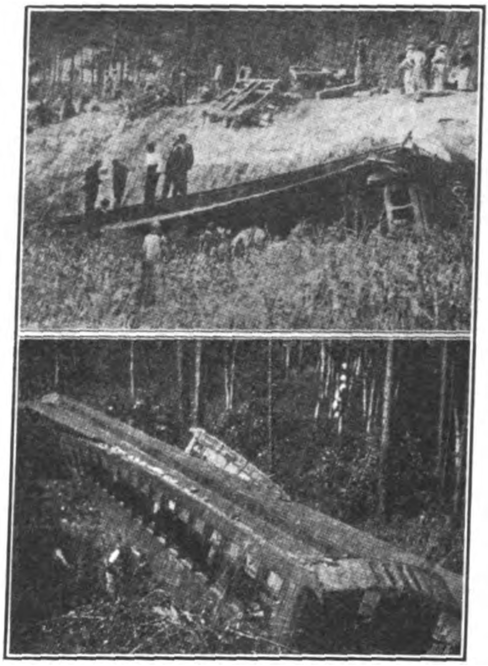
Information is also desired at the hearing as to what the amount of the charge should be, if any is to be imposed. The suggestions already made to the Commission range from 50 cents a car, in cases where the operation is simple, the spur track short and the district not congested, to $2.50 a car in cases where the congestion exists and the service is extensive. The Commission desires to be fully advised at the hearing on this point.

The matter of making a charge for placing cars for loading on spur tracks leading to coal mines and coke ovens will be taken up for consideration as a separate matter, and March 4 and 5 have been reserved for hearing testimony on this subject. At this time testimony will also be heard touching the propriety of the cancellation by carriers of allowances and divisions to the industrial roads of coal companies and operators.

March 6 and 7 have been reserved for hearing testimony respecting the proposed increase in coal rates, and March 9, 10 and 11 have been set aside for hearing testimony upon the general objections to the proposed general increase in rates, and particularly for hearing representatives of the State railroad commissions.

That part of the case that pertains to the proposed increases in the lake-and-rail rates will be heard at Washington on March 12, 13 and 14.

Separate hearings will be assigned to consider lighterage and other special services at New York City and New York Harbor, and concerning reconsignments and diversions in transit, free storage, etc.



Upper Picture Shows Condition of Coach No. 87, the Third Car in the Train After the Accident.

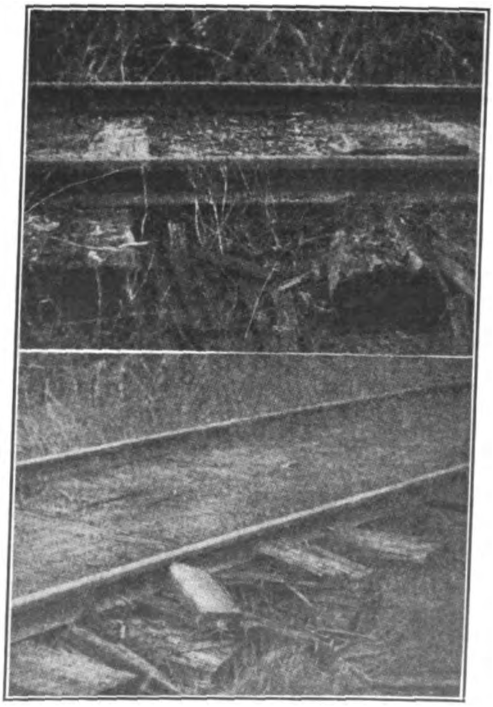
Lower Picture Represents the East End and South Side of Coach No. 233 After the Accident.

Results of Recent Accident Investigations.

THE Commission through its division of safety appliances, has recently concluded a number of investigations with reference to wrecks which have occurred in various sections of the country. On November 13, 1913, there was a derailment of a passenger train on the Central of Georgia Railroad, about four miles east of Clayton, Ala., resulting in the death of nine passengers and the injury of 389 passengers and one employe. The line on which the accident occurred is of a single track character and extends between Eufaula and Ozark, Ala., a distance of sixty miles. At the place of the derailment, the track is on a fill about twenty-five high. The three rear cars left the track and as the result of the derailment, the rear platform, a portion of the end sill and coupler, and draught timbers were torn from the second car in the train and remained attached to the third car. The third and fourth cars were derailed on the south side of the track torn from their trucks and thrown down the embankment. The following illustrations give some idea of the damage wrought.

The investigation shows that while the direct cause of the accident was a broken rail, bad track conditions and speed inconsistent with safety were materially attributed to the causes, both to the derailment and of the disastrous results. The track in the vicinity of this accident was in a deplorable condition as indicated by the two accompanying illustrations. According to the report, the track has also outlived its usefulness and many broken rails were repaired in such a way as to indicate that material was not furnished for making repairs in a proper manner. To quote from the report:

"When rails of this character are used on rotten ties, without ballast, and with an inadequate force of men to control the track and



Conditions of Track West of the Accident.

perform necessary work, as this investigation shows was the condition existing on this branch, accidents of this character may be expected to occur."

The chief inspector of Safety Appliances has also issued his report regarding the derailment of a freight train on a southern railway near Oyama, N. C., which occurred on March 31, 1913, and which resulted in the death of three employes and the injury of a trespasser. The engine tender and sixteen cars were derailed on the south side of the track, eleven cars were destroyed and the track was torn up for a distance of 330 feet. The speed of the train at the time of the derailment was from 25 to 30 miles an hour which was within the speed restriction for freight trains in effect on this division. Approaching the scene of the accident from the East, there is a two per cent curve to the south, 2,300 feet long, followed by a tangent 2,700 feet in length. Following this tangent is a one per cent curve on the north, 5,400 feet in length.

The derailment occurred about 1,122 feet from the east end of the tangent, 300 feet from the foot of the descending grade on a fill five feet high on the south and two and one-half feet high on the north. It was caused by a broken rail on the south side of the track. The rail was broken in eight places, the shortest piece being about seven inches long and the longest piece sixteen feet two and one-half inches. The engine of the train weighed 197,750 pounds with 176,650 pounds on the driving wheels. The rail which was fractured was 33 feet long, and weighed 30 pounds to the yard, was rolled in November, 1904, and laid in the track in January, 1905.

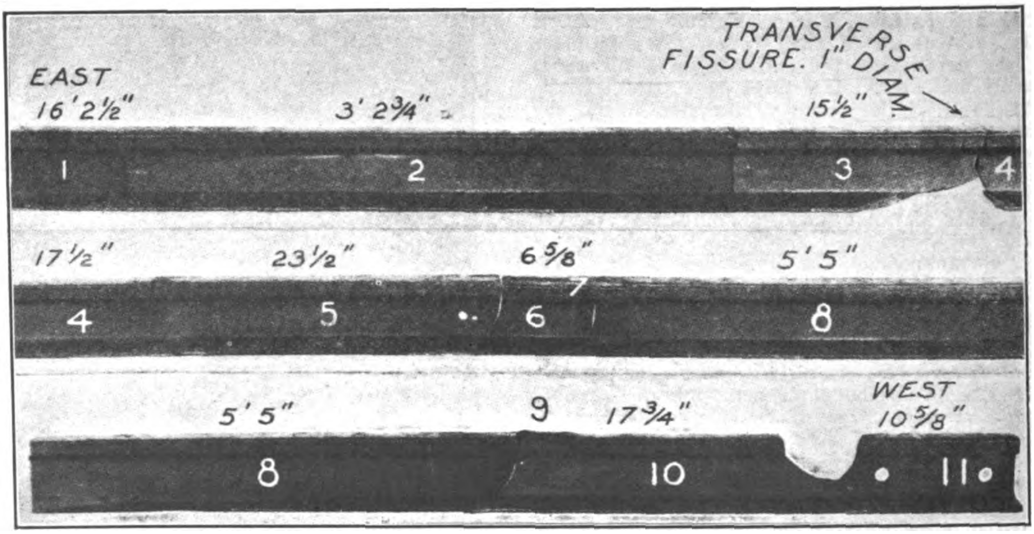
An examination into the cause of the breakage was made by the Bureau of Standards of the Department of Commerce, the examination being personally conducted by Mr. James E. Howard, enginer-physicist of the Bureau of Standards. The first break in the rail was found sixteen feet two and one-half inches from the east end, while the part of the rail west of this fracture was broken in nine pieces ranging from 6⅝ inches to five feet five inches in length. From the appearance of the fractures and the battered end of the pieces, it is believed that the first break occurred either between pieces number two and three or between pieces number three and four, as shown in the accompanying illustration. A transverse fissure one inch in diameter, was found in the fracture between pieces three and four and that fact, together with other evidence brought out by Mr. Howard's investigation, indicated that this fracture was the first one to be formed.

Mr. Howard points out that transverse fissures are progressive in their character and development. They have been observed at different stages in their growth from 0.30 inches in diameter to a maximum of 2½ inches. The material and locality in which they exist have been defined. They have been found only in steel rails, where they commonly are developed on the gauge side of the head, or over the web. In their development from a minimum to a maximum diameter the extension takes place while the rails are under service condition in the track.

Furthermore, Mr. Howard calls attention to the fact that—

The rate of development, however, of a transverse fissure should in general be an accelerating one, since the resistance of the rail diminishes as the fissure extends.

It is a question of interest whether an effect caused by an excessive load, but not immediately resulting in actual rupture, is further accentuated by the application of lesser loads; that is, whether the effect of an overload coming from the drivers of the engine would be further increased by the lesser wheel loads of the train. Laboratory tests on the effects of repeated stresses have shown, however, that many million repetitions of a lesser load may be applied to a steel bar without causing rupture, while substantially the normal number of repetitions of a maximum load will thereafter effect a fracture.



Showing the Various Breaks Which Occurred in the Rail in the Accident at Oyama, N. C., on March 31, 1913.

This is so vital a feature in the use of railway material that confirmatory data are desirable to acquire from independent sources. Provided these indications are trustworthy, it follows that the limit of endurance of a steel rail is not necessarily measured by total tonnage, but rather by the number of repetitions of high wheel loads to which it is exposed.

* * * * * * * * *

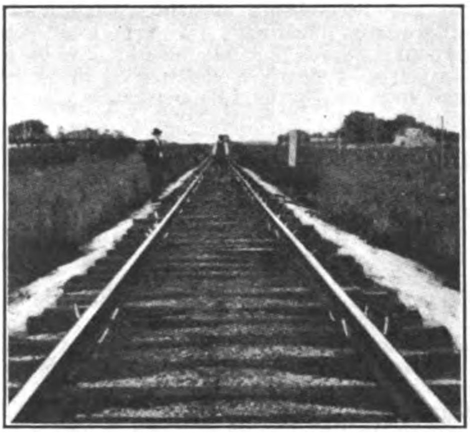
Frequent rail fractures are regarded as sufficient warning that railway practice is approaching the limit of endurance of rail steel.

The facts disclosed by the investigation of this derailment emphasize the statements made in the report regarding the derailment on the Louisville & Nashville Railroad, near Hay's Mill, Ala., where it was stated that the combined bending stresses and intense wheel contact stresses which attend the service conditions of steel rails appear to be the cause of the formation of these fissures. The insidious character of these fissures and their menace to safe travel by rail justify the conclusion reached that there is an absolute necessity of making a complete investigation of track and wheel conditions for the purpose of determining the effect thereon of the recent types of locomotives and cars with their greatly increased wheel loads.

Another report recently issued by the Chief Inspector of Safety Appliances covers his investigation of a derailment which occurred on the St. Louis and San Francisco Railroad near Chelsea, Okla., on October 29, 1913, to a passenger train, resulting in the death of the engineman and the injury of the fireman. The forward tender trucks of the locomotive with the first wheels derailed ran along the roadway until the passing track switch was reached and at this point the derailed truck came in contact with the switch and broke the frog and one throw rail. The engine and tender continued westerly on the main line for a distance of about 200 feet before turning over to the right. The cars making up the train were diverted to the switch and to the passing track which was on the left hand side of the main track. The first three cars were derailed but remained upright.

Careful examination of the trucks, wheels, center castings, etc., of both the engine and tender showed nothing which could have caused the derailment. The report states, however, that examination was made of the track from a point one-half mile east of the point of derailment to a point nearly one-half mile west of Chelsea, a total distance of about one and one-half miles. It is further stated, that the track conditions disclosed by this examination were extremely bad; in fact they were such as to constitute a dangerous menace to the trains and safety. Rail joints were found improperly secured and ballast was insufficient or improperly distributed.

To quote from the report: "Bridge number 379.6 was located nearly 2,700 feet west of the station at Chelsea. Examination of the track for a distance of seven rail lengths each of this bridge showed that out of a total of 134 ties, 78 were defective, one rail length having sixteen defective ties out of nineteen ties in use. Of the sixteen defective ties under this rail, fifteen were successive ties. In this same distance of seven rail lengths, there were 142 loose or missing spikes and 126 spikes which could be removed by hand, a total of 268 spikes out of 536 in use which had practically no holding power."



SECTION OF THREE RAIL LENGTHS FROM WHICH NINETY-SIX SPIKES WERE REMOVED BY HAND.

The report contains other examples of bad road bed conditions in this vicinity, but the above quotation and the accompanying illustration are sufficient to illustrate the Commission's statement regarding the poor condition of the right-of-way at this point. In closing his report, Chief Inspector Belnap stated that "while the cause of this accident was not definitely determined, it is believed that the track conditions were not safe for the operation of trains at the speed permitted, and that these conditions caused the tender of the locomotive hauling this train to rock back and forth until finally the forward wheels were derailed.

"The existence of track conditions such as was disclosed by this investigation constitutes a dangerous menace to the traveling public, and vigorous measures toward remedying these conditions should be taken at once."

Report on Safety Appliances.

H. W. BELNAP, chief inspector of the Commission, has issued his annual report containing a review of the work of the safety appliance division during 1913. During the year twice as many cars were inspected as in 1912. Explaining the tabular setatements in the report, Mr. Belnap says.

"Defects to visible parts of air brakes constitute nearly 50 per cent of the total number of defects reported. This is a condition which should not be permitted to exist. Practically 50 per cent of the defects reported under the classification of 'uncoupling mechanism' consist in broken uncoupling chains. These chains may be quickly and readily repaired at any time and place, and the proportion of such defects to the total number of defects reported is inexcusable. The number of uncoupling devices which have no chain has greatly increased in recent years; their general adoption will effect a proportional diminution in the aggregate number of defects. The Master Car Builders' Association has acted with a view to the adoption of a standard coupler, and it is to be hoped that at its next convention it will recommend a standard.

"Under 'running boards,' out of a total of 6,912 defects reported 4,265 consisted in loose braces.

It has also been found in many instances that drive screws or fluted nails have been used to secure running boards to saddle blocks. The use of such material is clearly a violation of the standardization order of the Commission and should be discontinued.

"The principal defect, numerically, in the matter of handbrake equipment continues to consist in the absence of the cotter key or ring from the bottom of the shaft. In most cases these keys seem never to have been applied. Hand brakes are frequently found inoperative by reason of shifting of the contents of cars. The Act of April 14, 1910, requires all cars to be equipped with efficient hand brakes.

"The record of terminal or standing tests of air brakes made by our inspectors shows that there are a number of instances in which the percentage of operative air brakes has been found to be below the minimum of 85 per cent prescribed by the Commission's order of June 6, 1910. The importance of these tests as an element of safety cannot be overestimated. At many terminals the only air brake test made by the carriers consists merely in the ascertainment of whether or not the air is working throughout the train line. Such tests provide no adequate information as to the efficiency or otherwise of individual brakes, and trains are not infrequently permitted to leave their terminals with insufficient braking power. The interval of five or ten minutes necessary to make a standing test is scarcely to be counted in comparison with the proportional increase in the measure of safety resulting from such a precaution.

"The charge that our inspectors have delayed traffic by the making of terminal tests is not well founded, for the reason that such tests are invariably completed within a few minutes. The real occasion for delays to traffic has in most cases been the situation disclosed by such inspections. Our inspectors will hereafter make standing tests of every train that leaves a terminal while they are present. This may, of course, occasion slight delays to traffic, but the tests will be made as expeditiously as possible, and if the efficiency of individual brakes is maintained at a proper standard the time consumed in making tests will be inconsequential.

"The Commission's standardization order was issued March 13, 1911. The period of limitation in which locomotives of all classes were to have been equipped comfortably to the provisions of this order has already expired, while the three-year period as to passenger equipment will expire on July 1, 1914. The progress in the equipment of passenger cars is such as to warrant the belief that the requirements of the Commission in this respect will be observed within the time prescribed. The proportion of freight cars, however, already equipped, as compared with the total number of such cars to be equipped, is still unduly small, and unless this work of equipment is very materially expedited it will not be completed within the limit fixed by the extension order of March 13, 1911. I therefore renew my recommendation that the Commission require the carriers to report semiannually the progress hereafter made in the equipment of freight cars in service on July 1, 1911.

"Inspectors are required not only to inspect safety appliances, to procure evidence to be used as the basis of prosecutions under the safety appliance act, and to attend court in the capacity of witnesses in such proceedings, but also to make terminal tests of air brakes; to examine locomotive ash pans; to inspect railway mail cars; to investigate accidents; to investigate and report on numerous informal complaints; and to confer with the mechanical officials of railways relative to the proper equipment of cars. The work performed by the various inspectors during the fiscal year just closed presents a creditable showing.

"At the present time there are in service approximately 2,250,000 freight cars, 58,000 passenger cars, and 63,000 locomotives subject to federal inspection, and in order to examine in any one year more than a very small percentage of the aggregate equipment it is obvious that the number of inspectors should be increased. It is therefore respectfully recommended that additional inspectors be appointed. * * *"

Table No. 1 shows that during the fiscal year 738,665 freight cars were inspected, of which 54,055 were found defective. The lists showing the items making up this total fill two pages.

Table No. 2 shows defects on each individual railroad, but includes only those roads on which 500 or more cars were inspected during the year, the defects being divided into 16 classes. This list contains the names of 135 roads.

Table No. 3 shows the names of 150 roads on which terminal tests of air brakes were made, the total number of trains tested being 1,040. The number of air cars in these trains was 29,637, of which 1,610 had brakes that did not apply. On 397 cars, brakes were found with excessive piston travel.

Table No. 4 shows, by roads, the number of cars inspected, and the number found defective, on 119 representative roads, each year for five years.

Table No. 5 shows the total amount of penalties, exclusive of costs, paid by the railroads into the courts up to November 1, 1913, for violations of the laws relating to safety appliances, to hours of service and to ashpans. This list contains 250 roads and the combined total of the penalties is $480,962. The length of time covered by this table is not given, but it is to be borne in mind that prosecutions under the safety appliance act began a number of years before the hours of service act went into effect. The totals under the different heads are as follows: Safety appliance act, $319,400; violations in working time of trainmen, $120,662; telegraph operators, $21,400; failure to file reports, $14,500; ashpan act $5,000.

Railroads Desire to Retain Water Lines.

THE Commission received a number of petitions during February for relief from the operation of the Panama Canal Act, which requires interstate railroads to divest themselves of ownership or control of steamship and other water lines before July 1, 1914. Under the law the Commission is given discretionary powers as to what roads shall operate such lines, those which may be exempt from the Act, being the lines whose operations do not exclude, prevent or reduce competition. Among those who have applied for permission to continue their water lines are the Pennsylvania Railroad, Lehigh Valley, Southern Railway, New York, New Haven and Hartford, the New York Central and Hudson River, the Duluth, South Shore and Atlantic, Grand Rapids and Indiana, Michigan Central, Atlantic Coast Line, Delaware and Hudson, Norfolk and Western, Seaboard Air Line, Chesapeake and Ohio, Southern Pacific and the Central Pacific.

Actual Answers Taken from Examination Papers of Applicants for Positions with the Interstate Commerce Commission.

THAT many American citizens do not permit lack of knowledge to stand in the way of their efforts to procure a Government position with the attractive salary attached thereto, is evidenced by the replies given by many applicants to the questions found in the recent examinations held by the Interstate Commerce Commission for the purpose of procuring men to engage in the work of physical valuation. The following are copies of answers that appeared on some of the examination papers:

A. Common carrier is one who carries.

A. Common carrier is a vehicle which the railroads use for transporting passengers.

A. Carrier is a man at a town where there is no wagon delivery.

Q. If a rate is provided on a mixed shipment of different articles, and it is found to be higher than either the separate class or commodity rate on any or all of the articles specified, which is the lawful rate?

A. The low rate which gives the shipper the advantage.

A. The lowest rate on the article taking the highest rate, that is, if the rate provided for the shipment is higher than the class or commodity rate for the article taking the highest rate. If one article has both a commodity and a class rate, and the lower of the two is higher than the lower rate of any other article, that applies; but if another has both a commodity and a class rate, the higher of the two being higher than the lower of the first mentioned, that applies.

A. Proportional tariff is one in proportion to the shipment.

A. Classification is a diary of different articles in a class so that the carrier can realize a profit.

A. Classification is a list of articles designated as taking a certain class, segregating all articles from another.

A. Classification is freight rates.

The Principal classifications—Canadian, Ohio State and Interstate Official. Of course the Interstate is omnipotent throughout the United States, and it is the principal classificaion.

A. Combination fare is more than one person.

A. Joint tariff is where two classifications are shipped in one package or bale.

An expense bill is mending broken packages.

Exceptions to classification is where special conditions prevail, as where there is no derrick.

A. Demurrage charge is an overcharge.

Demurrage charge—it causes endless strife.

By absorption of switching charges is meant that it might spoil or leakage.

TRAFFIC.

Exchanging Mileage Coupons for Railroad Tickets.—For the convenience of passengers boarding its trains at Reading and Norristown, the Pennsylvania Railroad on January 19th, extended to those stations the privilege of exchanging mileage coupons for railroad tickets.

The new plan is this: Anyone intending to ride on a Pennsylvania Railroad train, and who owns a book of mileage coupons good on the Pennsylvania Railroad, can, if desired, take the mileage book to a ticket office and exchange the required number of miles for a ticket. In this way a passenger who prefers to use a ticket instead of a mileage book gets the benefit of the low mileage rate.

Rule on Free Passes in Pennsylvania.—The General Manager of the Pennsylvania Railroad has issued the following notice to employes:

"By general notice, dated November 29, 1913, officers and employes were advised that, under the terms of the Public Service Company Law of the State of Pennsylvania, the free transportation between points within that State of members of their families would not be permissible after January 1, 1914, and that the issue of passes covering such transportation after that date would consequently be discontinued.

"The Public Service Commission of the Commonwealth of Pennsylvania by its Administrative Ruling No. 1, has ruled that the granting by railroad companies of free passes to their officers and employes to be used for the transportation of dependent members of their families would not be regarded by the Commission as a violation of the provisions of the Public Service Company Law.

"This ruling will be accepted as affording protection against exaction of penalties for the issuance of passes to dependent members of the families of officers and employes, and the General Notice of November 29th last, is therefore annulled."

Co-Operating to Prevent Car Shortages.—To what extent shippers have co-operated with the railroads in their campaign to prevent car shortages by loading equipment to maximum capacity is shown by the figures issued by the traffic department of the Universal Portland Cement Company for 1913. This Company shipped 10,383,111 barrels of cement in 53,585 freight cars in 1913, as compared with 7,686,047 barrels shipped in 43,097 cars in 1911. The figures indicate a maximum loading of freight cars in 1913, which was not the practice in 1911. An average of 194 barrels were loaded in a car last year, the loading having been increased from 178 barrels in 1911. This increase in carload saved the use of 4,747 cars which would have been required additionally to move last year's traffic on the basis of the loading in 1911.

This industrial concern has reduced the number of cars required to handle an increasing business by loading the cars to capacity plus ten per cent. A campaign was conducted with the trade and selling forces of the company so that orders would insure maximum loading of cars.

Other shippers are carrying out the principles outlined for the prevention of car shortages, but the results obtained by the cement company on such a big scale have attracted special notice in transportation circles.

A New Plan for Stimulating Traffic on the Frisco.—A supply of individual business cards and prospective traffic cards have been furnished all passenger conductors on the Frisco, with a view to having them assist in the solicitation of business.

The individual cards bear the motto: "It will always be our desire to make your trip comfortable and pleasant on a Frisco train." The prospective traffic card bears the motto: "Let us have an opportunity to demonstrate to you that we can handle your carload and L. C. L. business to your entire satisfaction. Our service is strictly first class."

This plan of soliciting business is being tried out, based on the fact that passenger conductors are well acquainted with a large number of shippers and receivers of freight and are adding to their acquaintance daily.

When a conductor meets a prospective shipper on any one of his trips, he is to hand him one of his business cards as well as one of the prospective traffic cards, which he is asked to fill in—or the conductor may fill in this card for the prospective shipper—after which it is to be mailed to the superintendent of the division on which the conductor is employed. The superintendent in turn forwards the card to the proper traffic official or agent. It is necessary that the cards be mailed promptly at the end of each trip.

When additional cards are needed a requisition on the office of superintendent will bring a new supply promptly. A record of the number of cards turned in by each conductor is kept for comparative and other purposes.

Trade Possibilities with the Latin American Countries.—A circular which should prove of interest to shippers all over the country has been issued by the traffic department of the Missouri Pacific-Iron Mountain. The matter contained in the document is based on information furnished by Mr. H. C. Dinkins, Special Representative of the railroad, who some time ago was assigned the duty of visiting the Latin American countries and making a study of trade conditions and opportunities there.

This particular circular, which is one of a series to be issued along the same lines, deals principally with conditions in Chile and Argentine Republic, two of the countries visited by Mr. Dinkins, and gives much valuable first-hand information with reference to shipping facilities at the principal cities, the names of the foremost shipping and receiving agents, the more important articles of import and export and the commodities of which the different shipping concerns make specialties. The principal lines of industry are also set forth, as well as the natural resources of the countries. According to the report, the merchants and dealers of the South American countries are anxious for better service from the Gulf ports.

The trade of Argentina at present is controlled largely by Great Britain and Germany, although many big United States firms have representatives there.

Mr. Dinkins believes that the opening of the Panama Canal will enable the United States to do a much larger business with Chile, where the English have decidedly the better of the trade at present. Santiago, the capital of the country, has a populaion of 403,000, but most of the business is done through Valparaiso, the principal seaport. The latter has a population of 263,000 and most of the principal business houses in Santiago and other points are branches of Valparaiso concerns.

At present, financial conditions are bad in Chile, Peru and Bolivia and business in these three countries is largely at a standstill.

To Investigate Privileges of Plant Railways as Common Carriers.—One of the most sweeping investigations ever undertaken by the American Railway Association will be begun within a few days for the purpose of eliminating from membership in the organization every plant railway which has been representing itself as a common carrier.

Announcement has been made that more than 300 small roads will be included in the inquiry and that at least one-third of them probably will be dropped from the organization. This action will not only compel them to pay demurrage instead of per diem rates for the use of cars belonging to other lines, but also will prevent their officials from obtaining passes on various railroads throughout the country.

It is learned that the Illinois Northern Railway, owned by the International Harvester Co., the Pullman Railroad owned by the Pullman Co. and the Chicago & Western Railroad owned by the Dolese & Sheppard Co., were among the nineteen plant lines barred recently from participating in the per diem agreement of the Association.

ORGANIZATION NOTES.

Annual Dinner of Central Railway Club.—The annual dinner of the Central Railway Club which was held in Buffalo, New York, on Thursday evening, March 12th, proved to be a notable occasion. As heretofore, it was preceded by a reception in the parlor of the hotel affording members and their guests an opportunity to greet each other and enjoy a brief period of social pleasure with a renewal of old associations.

Among the guests were B. D. Caldwell, president of the Wells-Fargo Express Company and past president of the Traffic Club of New York; George A. Post, of New York, president of the Railway Business Association; D. I. Roberts, of New York, president of the United States Express Company; Major Charles Hine, former vice-president of the Southern Pacific Railroad and W. T. Noonan, of Rochester, president of the Buffalo, Rochester and Pittsburgh Railroad. Addresses were delivered by Mr. Post, Mr. Roberts and Major Hine. Mr. Caldwell was toastmaster.

Second Annual Meeting of the Chamber of Commerce of the United States.

THE second annual meeting of the Chamber of Commerce of the United States was held in Washington on February 11th, 12th and 13th. Charles A. Prouty, of the Interstate Commerce Commission spoke on the valuation of railroads and in fact, the program as a whole, was of interest to all transportation men, as two entire days were devoted to the various phases of corporation control that have been brought to the front by the trust legislation of the past year and by the president's message to Congress on January 14th. William B. Wilson, secretary of Labor also addressed the meeting on "The Relations of the Department of Labor to Industries and Commerce."

Trust legislation was discussed under the head of the following questions:

1. Concentration of industry in the United States—What constitutes
   (a) Unreasonable restraint of trade?
   (b) Unfair competition?

In what respect does the Sherman law require definition?

2. Should holding companies be abolished?—Should interlocking directorates be prohibited?—Should persons or corporations be permitted to own control of competing corporations which between them do more than half the business in a particular line?

3. What should be the rights and privileges of private parties—
   (a) In intervention in Government action under the Sherman Law to prove damages—
   (b) In invoking equity powers to restrain violations of the Sherman Law—
   (c) Under the statute of limitations: Should the statute be extended in their interests so as to run from the date of the entry of judgment in a Government suit?

4. What should be the functions of a Federal Interstate Trade Commission:
   (a) Administrative powers to restore competition and enforce the Sherman Law and new laws defining its scope—
   (b) Quasi-judicial powers of legislation—
   (c) What requirements as to publicity should be enforced?

5. Is the trust form of organization industrially efficient?

Among the speakers were President Charles R. Van Hise, of the University of Wisconsin; Louis B. Brandeis, of Boston, Mass.; Frederick P. Fish, former president of the American Telephone and Telegraph Company; Victor Morawetz, of New York City; Professor Henry R. Seager, of Columbia University, New York and Henry R. Towne, president of the Yale and Towne Manufacturing Company, and former president of the Merchants' Association of New York City.

Annual Dinner of Traffic Club of Pittsburgh.

THE twelfth annual dinner of the Traffic Club of Pittsburgh, will be held on Friday evening, March 27th. The annual affair of this pioneer club has heretofore only been limited by the capacity of the largest hotel and banquet hall in Pittsburgh, but in order to accommodate many desirable guests who through lack of space have not been able to attend other annual affairs, the committee has arranged for the Memorial Hall, using both banquet and concert halls. With men of national note for speakers, it is announced that arrangements are being rapidly completed and will result in a function surpassing anything of like character given by this Club.

Annual Dinner of Newark Traffic Club.

NOVEL and unique ideas were introduced at the fifth annual dinner of the Traffic Club of Newark, N. J., held on Saturday evening, January 24th. The entrance to the banquet room, known as "the special dinner car" was attended by uniformed railroad gatemen and tickets were inspected upon entrance, the guests finding their places by means of seating lists arranged in form of time-tables. Railroad porters, messenger and newsboys were on hand to anticipate the wants of those present and introduction to the many songs was sounded by a locomotive bell, which rang at intervals.

To further the scheme of good fellowship between carriers and shippers, a miniature electric railway held sway on the guest table, where amusement was gathered in its efficient exhibition.

The Dinner Committee composed of A. Preston Jump, chairman; W. A. Ruehl, W. W. Finley, Jr., and W. John Creighton, was rewarded for its untiring efforts both from an entertaining and intellectual standpoint, their selection of speakers alone made the evening meet with the hearty approbation of all present.

Mr. A. V. Hamburg, President of the Board of Trade of Newark, in his address "The Commercial Growth of the World" drew deep from the records of history and came slowly forward to the present period, where education was bringing the desired results of efficiency.

Mr. Jackson E. Reynolds, General Attorney of the Central Railroad of New Jersey, spoke at great length on the difficulties with which railroads contended.

The speaker called attention to legislation aimed at railroads wherein from 1910 to 1913, ten anthracite roads had increased their property investment by $300,000,000 and as a result of this investment the gross income of the concerns increased to $84,000,000. However, it was found that operating expenses had risen to $85,500,000 or $1,500,000 in excess of additional earnings.

The proposed National Securities Commission, if created, meant further difficulties for the railroads through the various State Commissions in issuing certificates, argued Mr. Reynolds, and if the companies were compelled to meet the demands of these various bodies, that 'ere long they would be unable to market their securities as the investing public would refuse to subscribe.

Mr. Ivy L. Lee, Executive Assistant, Pennsylvania Railroad, concluded the addresses of the evening, touching strongly on passenger facilities of Newark and removal of grade crossings. The management of the Pennsylvania Railroad, he said, had a definite purpose as soon as feasible, to build four tracks across Market Street and to rebuild the present station with a modern building, providing high level platforms between the inner tracks. This, however, could not be done immediately, as financial skies are not sufficiently clear to justify a prudent railroad in any large expenditures just now.

To remove all grade crossings in New Jersey, Mr. Lee stated, it would cost his road $60,000,000 there being just 1,200 such crossings still to remove and in his opinion this expense should not be borne entirely by the railroad. Public service corporations, on motion of municipality, a railroad, or on a commission's initiative, should have the right to designate such grade crossings as should be removed, and should have power, after hearing all parties in interest, to apportion the cost of such improvements with due regard for the interests of all parties concerned.

This dinner was the largest ever held by the Club, being attended by one hundred and sixty guests, among whom were the following: C. A.

Swope, General Eastern Agent of the Louisville & Nashville Railroad; A. Preston Jump, Freight Agent, Carnegie Steel Company; R. J. DeLong, General Passenger Agent of the Pennsylvania Railroad; Ivy L. Lee, Executive Assistant of the Pennsylvania Railroad; Augustus V. Hamburg, President, Board of Trade, City of Newark; H. B. R. Potter, Commercial Agent, Erie Railroad; Jackson E. Reynolds, General Attorney for the Central Railroad of New Jersey; Nat Duke, Assistant Traffic Manager of the Delaware, Lackawanna & Western Railroad; John T. Rogers, Traffic Manager, Thos. A. Edison, Inc.; Irving C. Brown, of L. Bamberger & Company and Charles Milbauer, General Agent of the Transcontinental Freight Company.

Annual Banquet of Fort Worth Traffic Club.

THE first annual banquet of the Traffic Club of Fort Worth was held in the Westbrook Hotel on the evening of February 5th. The members and their guests were interestingly entertained by the Hon. W. D. Williams, of the Railroad Commission of Texas who spoke at length on the rate situation in that State. Mr. Clarence Owsley also addressed the banqueters on European travel.

While the Traffic Club of Fort Worth has not yet been in existence two months, more than one hundred and seventy members and guests were in attendance at its annual dinner. The purpose of the organization is to promote a better acquaintanceship between all interested in matters pertaining to traffic. The following officers elected for the first year are:

President—J. M. Andrews, of Armour & Co.

Vice-presidents—R. E. Lay, H. & T. C. R. R. J. C. Griffith, W. C. Stripling Dry Goods Co.; J. M. C. Usher, Washer Bros.; R. L. Carnrike, Mallory Line; E. C. Price, Nash Hardware Company.

Secretary—R. R. Wilson, Fort Worth Warehouse & Tfr. Co.

Treasurer—A. L. Sarrels, T. & P. and I. & G. N. Railways.

Board of Governors—Wm. Roundtree, Burton Dry Goods Co.; A. C. Farmer, Postal Telegraph Co.; W. B. King, Jr., Turner & Dingee; J. D. Gowan, F. W. & D. C. Ry.; R. O. McCormack, Secy., Chamber of Commerce; G. E. Littlefair, St. L. & S. F. R. R.; T. H. Pointer, H. & T. C. R. R.

January Meeting of Central Railway Club.—The January meeting of the Central Railway Club was addressed by Mr. Walter V. Turner, chief engineer of the Westinghouse Air Brake Company, who spoke on Air Brakes and why their possible utility and performance is not obtained in a high degree in actual service. He pointed out that the basic requirements of an automatic brake were reliability, flexibility and effectiveness. He went into detail regarding these three factors, paying particular attention to the influences effecting brake performance. He asserted that in the past, in designing cars, it has been the custom to pay little or no attention to the brake installation until the car and truck has been designed and then the brake installation had to be made the best and some times the worst way it could. He asserted that while it might appear to be asking too much to expect that the car be built around the brake installation, this should be done if proper economy, efficiency and safety are to be assured, that is to say, the proper brake design and installation must include certain well defined provisions, and if these are not possible to incorporate after the trucks and cars have been designed, the brake efficiency will suffer accordingly and a prolific source of trouble may have been embodied in the design as a whole. Mr. Turner asserted that in the last two or three years there had been a marked change in this respect and that now in some few cases, the brake is being considered as a part of the car, that is, as a part of the whole design with consequent limitations in parts of the design which would interfere with the incorporation of an efficient brake design.

January Meeting of the New York Railroad Club.—The New York Railroad Club held its regular January meeting on the 16th ult., on which occasion it was addressed by J. W. Harkon, member of the Canadian Society of Civil Engineers of Richmond, Que., on the question of which is the best in locomotive boilers, rigidity or flexibility. Mr. Harkon was of the opinion that rigidity was very wrong throughout the whole boiler and also that the only way to fully meet fire box trouble was to follow the marine practice and thus compensate for the forward movement of the box. For tube troubles, he suggested that flexible tube sheets should be provided which will equally compensate the expansion of the tubes and he asserted that when this was provided for, tube troubles other than those due to neglect and operation would disappear. In conclusion he stated:

"There is no better way of overcoming trouble arising from natural action than the using of other natural action to neutralize it. In nature every evil or poison has its antidote, and to provide means for flexible action without loss of strength, instead of attempting to resist expansion of metals is, in the writer's view of the matter, the only common-sense course, and the only way to find the antidote.

"Trusting that the importance of some efficient means of meeting the difficulties of locomotive operation will excuse the foregoing expression of views, the whole is respectfully submitted."

February Meeting of Western Railway Club.—The February meeting of the Western Railway Club was held in Chicago on Tuesday evening, February 17th. A paper was presented by A. J. Baker, engineer for the Marshall and Hushchart Machinery Company entitled: "Important Milling Machine Methods in Connection with Railroad and General Shop Work."

Annual Dinner of the Traffic Club of Philadelphia.—The Sixth Annual Dinner of the Traffic Club of Philadelphia was held at the Bellevue-Stratford Hotel, Tuesday, January 13, 1914. Upwards of 400 members of the club and guests were present.

Following the dinner addresses were made by Hon. E. E. Clark, Chairman, Interstate Commerce Commission; E. V. P. Ritter, President, Merchants' & Manufacturers' Exchange, New York; E. C. Sattley, President of the Pittsburgh Traffic Club. Ex-Postmaster General John Wanamaker was to have been present but was taken ill, and sent a paper which was read by

Mr. Robert S. Perry, one of the former presidents of the Traffic Club of Philadelphia.

Edward James Cattell, City Statistician of Philadelphia, was toastmaster.

Guests were present from Pittsburgh, Chicago, Birmingham, New York and cities in New England.

Formation of New Association to Improve Freight Service.—The formation of an association to be known as the American Freight Car Efficiency Association is projected by the Utica Chamber of Commerce, which has invited other commercial bodies to join with it in the movement for betterment of the freight service of the country. J. E. Handley, commissioner of the traffic department of the Utica Chamber of Commerce, asserts that $2,193,828 was paid in demurrage charges to ten Eastern roads last year, and that every dollar represents one car held in excess of free time and one full working day. The average daily travel of all loaded cars, he asserts, is twenty-four miles per day of twenty-four hours. At that rate, he points out, it takes a loaded car "forty days and nights to travel from New York to Chicago."

The purpose of the freight car association is to better that state of affairs, and "by giving appropriate publicity to the details of specific excessive delays to carload freight we will require them individually and collectively to remove the causes of delay and render to the shipping public improved transportation service—to increase the average miles per day per loaded car."

Organization of Veterans' Association.—Employes of the B. & O. resident in Pittsburgh and vicinity, who have been in the service for twenty years, or longer, are organizing a veterans' association, which will affiliate with the Veterans' Association of the system. Already more than 400 members have been enrolled at Pittsburgh. Branches have been established already at Baltimore and Philadelphia and steps are being taken to organize others at Brunswick, Md., Grafton, Wheeling, Newark, Chicago Junction and Garrett, Ind.

Bi-Monthly Meeting of the Traffic Club of Pittsburgh.—The Traffic Club of Pittsburgh held its bi-monthly business meeting at the Fort Pitt Hotel, February 9th, a feature of which was a discussion of the four-month clause in the universal bill of lading which was opened by C. S. Belsterling, traffic manager of the American Bridge Company, and was participated in by a number of the members. A buffet supper, served in the Dutch room, preceded the meeting.

Annual Dinner of Engineering Society of Western Pennsylvania.—Alfred H. Smith, president of the New York Central Lines, addressing the Engineering Society of Western Pennsylvania, at its annual dinner at Pittsburgh, expressed the highest confidence in Government Commissions for railroad regulation. He said in part:

"It appears most probable and proper that the Government, through its Commissions, shall pass upon the outlays made by these properties if private capital is to be called upon.

"In establishing the Commissions the people have provided a means of searching out the facts and truth of the matter in order that they, the people, may do justice and right. The railroads have hope and confidence in these bodies in this work.

"As a general proposition the railroads of this country are physically strong. It has been stated they carry high class freight at the rate of one ton three miles for the value of a two-cent postage stamp; that they carry one ton of dead freight four miles for one cent. Not all of them are making money at these rates. Some of them are getting thin and emaciated."

Annual Dinner of Pittsburgh Passenger Club. Club, given at the Fort Pitt Hotel in February, was not only a notable success, but a noteworthy event in local railroad annals in that, for the first time upon any similar occasion women were included among the guests. The handsome English room, where the dinner was served, was beautifully decorated for the occasion with flags, flowers and potted plants, while the table appointments were of unusual elegance and the dinner itself an elaborate affair. The gustatory portion of the program ended, President W. Scott Miller, who had welcomed the guests, introduced Wyn Burgoyne Morris, assistant general passenger agent of the Pittsburgh & Lake Erie, as toastmaster, under whose direction the flow of oratory was started and continued uninterruptedly till all three of the gentlemen who had been invited to address the diners—His honor, the Mayor of the City; Assistant General Superintendent, C. L. French, of the B. & O. and John W. Boileau—had spoken, after which a social hour was had. A feature of the evening was the singing by a chorus under the direction of C. A. Tushingham, city ticket agent of the Pennsylvania, in which the entire company of 200 or more, joined and which was both excellent and inspiring.

LEGISLATION.

New Jersey State Legislature Petitioned to Repeal Full Crew Law.—The presidents of the principal New Jersey railroads have petitioned the State Legislature to repeal the so-called "full crew" law and assert that they are facing a crisis in their financial careers such as has not been experienced in this part of the country in the last twenty years.

The petition states that "the prosperity of the Railroad Companies and their ability to meet proper demands upon them is, and justly should be, a matter of public concern," and then calls attention to the fact that the Full Crew Law passed in New Jersey last year has already caused a wasteful expense equal to the annual interest on at least $7,394,607 of capital.

The actual expense to their companies of the New Jersey law has to date been $295,784, a figure which would be largely increased if figures were available for all the companies affected.

Not only has this expense been incurred, but there has been no tangible benefit. Safety has not been promoted, and, as the petition says, "the expenditure has been wasted."

The petition for the Full Crew Law's repeal is signed by the following railroad presidents: Mr. Samuel Rea, of the Pennsylvania and West

Jersey and Seashore Railroads; Mr. W. H. Truesdale, of the D., L. & W.; Mr. F. D. Underwood, of the Erie; Mr. E. B. Thomas, of the Lehigh Valley; Mr. George F. Baer, of the Reading and the Central Railroad of New Jersey; Mr. A. H. Smith, of the New York Central, and Mr. J. B. Kerr, of the New York, Ontario and Western.

The railroad executives point out that their companies pay to the State annually $7,513,413.12 in taxes—"more than one-half the sum expended for public schools" in New Jersey. They also pay annually in wages to citizens of New Jersey approximately $47,671,481.

The railroad executives then point out these reasons why they should be relieved of the further operation of this law:

"They have felt the necessity of taking radical measures to reduce expenses and have been obliged to stop all but the most urgent improvements.

"Their application to the Interstate Commerce Commission for a five per cent advance in freight rates, action upon which has been recently further postponed, is a matter of common knowledge and has been under consideration by that body since May 14, 1913.

"They are required to spend large sums each year to provide safety appliances for the protection of employes against accidents.

"Large expenditures for steel passenger equipment will have to be made during the next few years.

"They are confronted with constantly recurring demands for increase in wages.

"The public is demanding the abolition of grade crossings.

"The withdrawal of large amounts from these purposes by the wasteful operation of this statute is an injury to the public.

"These and other causes have brought about a very large increase in operating expenses and created a situation calling for the most rigid economy. Notwithstanding which, these companies are compelled by this statute to expend, without any possible benefit or return, each year many thousands of dollars.

"The claim made that the Act would promote the safety of travelers or employes has been shown to be utterly unfounded; nor has the law proved beneficial in any respect. The expenditure which it has made necessary has been merely wasted.

"The Public Utility Commission before the passage of this law had full power to require the employment of additional trainmen in any instance where it was necessary. A repeal of this law will restore to them this power."

Bill Aimed to Remove Offices of Interstate Commerce Commission to Chicago.— Senator Kenyon, of Iowa, has introduced a bill in the United States Senate authorizing the removal of the headquarters of the Interstate Commerce Commission to Chicago. The bill also proposes to increase the membership of the Commission to sixteen and to divide the country into five sections, over each of which three commissioners shall have jurisdiction. It is further provided that no more than three commissioners shall be appointed from any one section or more than eight from any one political party. The terms of office are made eight years, and no commissioner shall serve in his home district or more than four years in any district. It is provided that the railroads shall have a right of appeal from any locality by the section board to the whole Commission. Besides designating the central office at Chicago, the bill also provides for division headquarters at Washington, Atlanta, Chicago, Kansas City and San Francisco.

To Investigate Rock Island's Financial History.—Representative Green, of Iowa, has introduced a resolution in Congress asking for a complete investigation of Rock Island finances, particularly with regard to the holding companies of this system. The resolution asks for a disclosure of all profits made by Mr. Reid and his associates in the financing of the Rock Island. The resolution has been referred to the House Committee on interstate and foreign commerce.

STATE COMMISSIONS.

California.—The Railroad Commission has issued a supplemental order authorizing the Southern Pacific Company to pay to the bankers and underwriters' syndicate a sum not to exceed $25,000, to cover the expenses in connection with the flotation of the $55,000,000 bond issue authorized by the Commission the ninth instant. The order also authorizes the payment of the five per cent one year notes of the Company due June 15, 1914, in the sum of $26,000,000; also a loan due May 29, 1914, in the sum of $4,500,000, and also the payment of $3,000,000 due for equipment already purchased.

Illinois.—The Public Utilities Commission has authorized the issue of $21,184,000 securities to be for the Chicago Northwestern Railway. It includes $10,000,000 equipment trust certificates and $11,184,000 in general mortgage gold bonds.

The Public Utilities Commission has suspended, until April 23rd, a proposed advance in rates on grain and grain products throughout the State ranging between ½ and 1 per cent per 100 pounds. The increase was suspended a short time ago until February 23rd, and the additional suspension was ordered in order to give the Commission an opportunity to give further consideration to a protest by shippers against the advance.

Kentucky.—The thirty-fourth annual report of the Railroad Commission of Kentucky, submitted to the Governor, shows assessments of tangible property of railroad companies in the State last year aggregating $70,241,609, as compared with $68,241,609 in 1912, and $54,181,031 in 1904, when the Commission began making such assessments. Operating trackage in Kentucky in 1913 was 3,973 miles. Accidents show considerable decreases, as compared with the preceding year.

The Commission reports that many complaints were adjusted last year without formal hearing. Reports of contested cases, together with opinions and orders, are contained in the annual publication.

Attention is called to the fact that many provisions in the Kentucky statutes are ineffectual in that certain duties are imposed upon carriers by law no adequate remedy is provided to make carriers comply. The passage of a comprehensive act is recommended, giving to the Railroad Commission supervisory authority over the rules, regulations and practices not only railroad companies, but over express companies, steamboat lines, electric railways and sleeping car companies.

Louisiana.—The Railroad Commission has issued an order directing the Yazoo & Mississippi Valley Railroad Company to equip with modern, approved block signals, during the year 1914, the entire line from Kenner Junction to North Baton Rouge. This order is an amendment to the order previously issued affecting the Illinois Central, Yazoo & Mississippi Valley, and Texas & Pacific roads, directing these roads to equip their lines with modern block signals at the rate of twenty miles a year.

Minnesota.— The Railroad and Warehouse Commission has ruled that the Northern Pacific and Great Northern Railroads must pay refunds to shippers of mixed carloads of stock within the State for excess charges in the six years of rate legislation which was terminated by the decision of the United States Supreme Court in the Minnesota rate case.

The application of the Duluth & Northern Minnesota for an injunction restraining the Minnesota Railroad Commission from enforcing the maximum commodity rate, under the Cashman distance tariff law, has been denied.

Missouri.—On February 4th, a big delegation of Kansas City produce men appeared before the Public Service Commission, to protest against a "storage charge" which railroads entering Kansas City make for the holding of a car longer than the free period of forty-eight hours. This charge is levied, in addition to the $1 a day demurrage charge. It is cumulative in its character, starting in at $2 and gradually increasing so long as the car is held on the "team tracks" without being unloaded.

The contention of the railroads is that the produce dealers at Kansas City and other places are using the cars for warehouse purposes. "They have the cars set out on the team tracks and there hold them until the market is right, and the commodity sold, after which they are reconsigned to destination," said Thomas R. Morrow, representing the Santa Fe. "It is cheaper for the produce men to keep the cars and pay $1 a day demurrage than to incur the expense of unloading and warehousing the commodity. To break up this practice the roads began the imposition of a storage charge which is levied as a rental for the car and as a penalty for holding it. This charge, which is cumulative, is intended to compel the unloading of cars and their removal from team tracks so that other dealers can get their stuff onto team tracks for inspection, sale and unloading."

The Commission, after hearing both sides, took the matter under advisement.

Montana.—The State Railroad Commission has denied the application of the Pullman Company, and the Northern Pacific, Chicago, Milwaukee & St. Paul, Great Northern and Oregon Short Line railroads to increase the sleeping car service average rate 75 per cent in cases where one person occupies either a section or a stateroom.

New York.—A very interesting point is involved in a decision handed down by the up-State Public Service Commission against the Delaware, Lackawanna & Western Railroad. The case grew out of complaints made by the Common Council of the city of Oswego and residents of South Granby, Lamson, and Little Utica against the Lackawanna for discontinuing four passenger trains running between Oswego and Syracuse and serving various intermediate points.

In answering the complaint Lackawanna claimed that the trains had proved unprofitable. The company was ordered to restore the service, however, on the ground that "It is not the law, and never was, that a railroad might refuse to perform all service which could not be performed at a profit."

Pennsylvania.—On February 5th, the Public Service Commission ruled that railroad companies in Pennsylvania may issue free passes to their officers and employes to be used for the transportation of the dependent members of the families of such officers and employes. The ruling is strengthened by a declaration that the granting of these concessions will not be regarded by the Commission as a violation of the provisions of the Public Service Company law, which went into effect January 1st.

It also ruled that the free transportation furnished by common carriers to policemen and firemen in the discharge of their public duties is not such free transportation as is prohibited by the provisions of the law.

A general order has been issued by the Public Service Commission on grade crossings providing that before an electric railway car crosses the tracks of a steam railroad, the conductor shall go in advance and ascertain whether there are any approaching trains. He shall not signal the motorman to proceed until he is assured that there is no danger. At crossings where conditions are especially dangerous, safety devices must be provided which must be submitted to and approved by the investigator of accidents for the Commission.

One of the regulations provides that a light shall be displayed on the dead end of railroad trains when it is necessary to shift cars by night over a public crossing, notwithstanding the fact that the crossing constitutes part of the yards.

President F. D. Underwood, of the Erie Railroad Company, has suggested to the Railroad Commission the danger of high power transmission lines, and suggested that special consideration be given to the method of construction, which should be adopted for all such lines where they cross the tracks of railroads overhead, and likewise of the minimum distance that they should be placed from the tracks of railroads when paralleling them.

Texas.—The petition of the railroads of the State for a hearing to consider the advisability of giving them a horizontal advance of fifteen per cent on all freight rates in effect in Texas has been refused by the Railroad Commission, the petition being dismissed without merit.

The Railroad Commission has issued its annual report for the year ending June 30th, 1913, compiled from the reports of 102 railroad corporations. The report shows that there were on

June 30, 1913, 15,823 miles of main line and branches, a net increase over 1912 of 342½ miles; yard track and sidings, 3,970 miles, increase of 212 miles, and a net increase of all classes of track of 554 miles. Of this mileage, 22.50 is narrow gauge.

The total capital stock and bonds of these 102 railroads is $483,298,424, of which $128,540,728 is stock and $334,757,696 is bonds. The general averages per mile of road are $8,409 capital stock and $23,206 bonds. Indebtedness other than stock and bonds, $6,459 per mile, making the total liabilities $38,074 per mile. This is an increase of $3,232 per mile.

The total passenger earnings of these railroads in Texas was $24,366,817; increase $3,528,697 for the year. The total gross freight earnings were $116,460,375, an increase of $10,107,074. The total increase in gross earnings was $13,678,844.

The operating expenses totaled $90,991,943, which is an increase of $9,273,821, or 11.35 per cent increase in income from operation is $4,405,022, the total operating expenses being $90,991,943. The net operating revenue is given at $23,171,847; the gross corporate income is $28,743,021, showing a decrease of $1,601,378.

The total assessed valuation of Texas railroads, including rolling stock and intangible assets for 1913 is given at $344,635,318 as against $334,573,512 for 1912. The total number of tons of commercial freight carried was 57,241,529, against 49,693,884 for 1912.

LEGAL.

Man Slaughter Indictments Against New Haven Officials Cancelled.—The man slaughter indictments resulting from the wreck at Westport, Conn., against five officials of the New Haven System, have been quashed by the State's Attorney at Bridgeport, Conn., but that official has refused to annul the indictment against former President Charles S. Mellen.

The Southern Pacific-Central Pacific Suit.—The Attorney General has filed suit at Salt Lake City to separate the Central Pacific from the Southern Pacific. Pacific coast shippers and travelers, through their representative commercial bodies, have flooded Washington with protests. For the question is serious. The suggested separation would mean hardship to the public and injustice to the company.

It is alleged that the two roads are competitive and are in restraint of trade. The history of their construction and operation will effectually refute this. In 1889 the Central Pacific was completed. The same stockholders in 1891 began their extensions southward. It happened that the Central Pacific was under heavy obligations for advances by the Government and investors refused to buy bonds for new work if they were to be subject to debts on the old. So that, purely as a matter of reassuring investors, and for no other reason, the Southern Pacific Railroad Company was organized and built the rest of the system, leasing the lines as completed to the Central Pacific. In 1885, with the full knowledge of the Government, the Southern Pacific Company was brought into being and took over all the lines in a more simple organization.

Always the roads have been constructed and run by substantially the same set of people. In the purchase of terminals and the extension of branches, but one point has been kept in mind, to give the coast an elastic and comprehensive transportation service regardless of whether it were Central or Southern Pacific, responsive to needs. The case is not the same as if the two roads had been built by different people, competing with each other and had been bought, one by the other, to put that competition out of the way. They were, from the beginning to the present time, parts of one amalgamated whole.

To separate the Central Pacific from the Southern Pacific would mean the duplication of organizations, rights of way, terminals, facilities and equipment. This would be expensive. Joint rates between the Central Pacific and the Southern Pacific or other companies would, on the general principles laid down by railroad commissions, be higher when the carriage is over two railroads than when handled by one entity, for all of which the public would have to pay. The public would get no better service. On the whole, the service would be inferior, because one company can give better service than two for the carriage of the same shipment or traveler. The tendency of rates would be upward, not downward, and the impediments to business and points of friction would be increased.

The Southern Pacific would be less effective than now. The Central Pacific would not serve the public as well as at present. The Southern Pacific would be left without a line from San Francisco to Stockton, its through connection to Portland and the North would be broken, and its branches to Ione, Lodi, Valley Springs; from Stockton to Mercer and Hilton; and from Berenda to Raymond would be marooned high and dry, dependent on another line to get its shipments from interior points to its main system. The difficulties this would occasion to passengers and shippers can be only imagined.

Certain through trains or routes that have been developed and used would be discontinued or broken up. Freight and passenger trains are now sent over the most direct lines, giving most expeditious service, and they would have to be forced over roundabout and indirect lines by either company under separation. All this would be a hardship to the traveler or shipper, a loss in time, and a loss in convenience.

Similar difficulties would present themselves with a separation of terminal facilities. Patrons on either Central Pacific or Southern Pacific now enjoy without further cost or inconvenience all the facilities of both roads.

CONSTRUCTION.

Correcting the Damage Caused by Western Floods.—The Baltimore and Ohio Southwestern and the Cincinnati, Hamilton and Dayton Lines have rebuilt or repaired all of the steel bridges destroyed or damaged by the floods of last spring. These include bridges at Hamilton, Ohio, Lawrenceburg, Ind., Zanesville, Ohio, Marietta, Ohio, Washington, Ind., Brownsville, Ind. and Morristown, Ind.

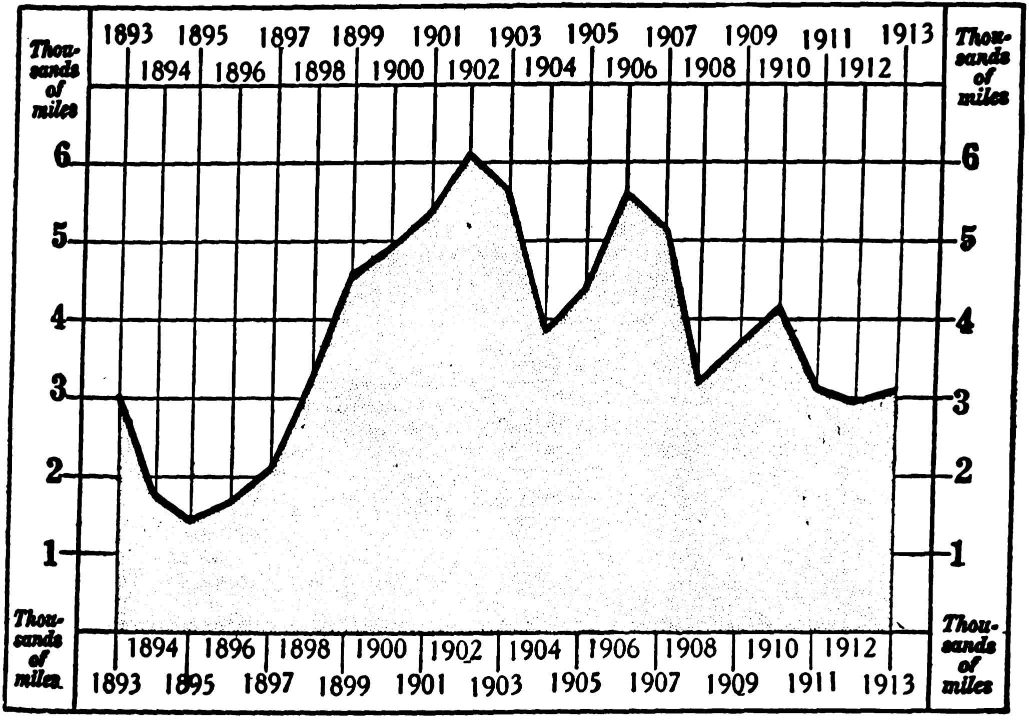
CONSTRUCTION.

The Growth in Railway Mileage.

THE following diagram appearing in the New York "Times Annalist," of February 23rd, indicates in a striking manner the growth of railway mileage in the United States from 1893 until 1913. As the chart indicates, from 1895 until 1902, there was a steady increase in the number of miles added to the country's system during each year. Since then, however, while there have been years which developed more favorable results than others, the movement has been steadily downward until 1913, the number of new miles constructed was only about half of the number built in 1902. In view of the comparative newness of the country and the millions of acres of productive land which is still inadequately supplied with transportation facilities, these figures form one of the many striking reasons which have recently been advanced for a more liberal railway policy. It is undoubtedly true that under what might be termed normal or favorable conditions, new railway contsruction could progress in this country for a number of years to come at the rate of at least twice that of 1913, both to the profit of railway investors and the public at large.

EQUIPMENT.

New Locomotives for the Missouri Pacific System.— The Missouri Pacific-Iron Mountain has placed an order with the Baldwin Locomotive Works, of Philadelphia, for twenty-five huge locomotives. They will be of the Mikado type and will be used in freight service. In every detail these engines will represent the latest effort in locomotive construction. The light weight of the engine and tender will be 311,900 pounds, and when in working condition and ready for service the total weight will run close to 400,000 pounds. The weight on the drivers will be 209,000 pounds and the locomotives will have a tractive force of 50,160 pounds. The specifications call for cylinders 27 inches by 30 inches, and the boiler pressure requirement is 170 pounds to the square inch. The total length of the engines will be 78 feet 4½ inches, and they will measure 15 feet 5½ inches from the rail to the top of the smoke stack. They will be equipped with Schmidt superheaters, a recent invention for increasing the power of steam, and will also have electric headlights and electric cab lights.



The Growth of Railroad Mileage

ELECTIONS AND APPOINTMENTS.

Executive.

W. G. Bierd, director and president, Chicago & Alton R. R. Headquarters, Chicago, Ill.

Charles S. Churchill, assistant to the president, in charge of federal valuation, Norfolk and Western. Headquarters, Roanoke, Va.

D. W. Cooke, vice-president, Erie Railroad. Headquarters, New York City.

Howard Elliott, vice-president, Rutland Railroad.

William Fleming, assistant to first vice-president, Pennsylvania Lines West of Pittsburgh.

Clarence W. Huntington, vice-president and general manager, Minneapolis and St. Louis Railroad. Headquarters, Minneapolis, Minn.

Robert L. Ingersoll, assistant to president, New York Central Lines. Headquarters, New York.

George T. Jarvis, vice-president and general manager, Rutland Railroad. Headquarters, Rutland, Vt.

F. H. Knickerbocker, assistant to vice-president and general manager, Oregon Shore Line Railroad. Headquarters, Salt Lake City, Utah.

M. P. Knowlton, chairman of the Board of Trustees, New Haven Railroad.

Oliver C. Lisman, first vice-president and general manager, Kansas City and Memphis Railway. Headquarters, Elkins, N. C.

Morris McDonald, president, Maine Central. Headquarters, Portland, Me.

J. F. Manning, president and general manager, Crystal River and San Juan Railway. Headquarters, Marble, Colo.

George F. Moore, president and general manager, St. Louis and O'Fallon Railway. Headquarters, South Side Bank Bldg., St. Louis, Mo.

A. B. Newell, president, Toledo Terminal R. R. Headquarters, Detroit, Mich.

Warren S. Palmer, president, Northwestern Pacific. Headquarters, San Francisco, Cal.

Edwin Pearson, assistant to the president and assistant secretary of the Spokane, Portland and Seattle Railway. Headquarters, Portland, Oregon.

A. E. Potter, president and general manager, Narragansett Pier Railroad. Headquarters, Providence, R. I.

P. M. Ripley, assistant to vice-president, El Paso and Southwestern System. Headquarters, New York City.

A. M. Schoyer, first vice-president, Pennsylvania Lines West of Pittsburgh.

S. C. Scott, vice-presidents' assistant. Pennsylvania Lines. Headquarters, Pittsburgh, Pa.

William R. Scott, vice-president and general manager, Southern Pacific. Headquarters, San Francisco, Cal.

Alfred H. Smith, president, Rutland Railroad.

J. J. Turner, first vice-president, Pennsylvania Lines West of Pittsburgh.

Frank B. Whipple, vice-president, San Francisco-Oakland Terminal Railways. Headquarters, Oakland, Cal.

J. L. White, assistant to the president, Chicago, Indianapolis and Louisville. Headquarters, Chicago, Ill.

Charles N. Whitehead, vice-president, Missouri, Kansas and Texas Railway. Headquarters, St. Louis, Mo.

Bluford Wilson, president, Chicago, Peoria & St. Louis R. R.

Legal.

Richard W. Barrett, assistant general solicitor, Lehigh Valley R. R. Headquarters, New York.

Orville F. Berry, of Illinois, examiner-attorney for the Interstate Commerce Commission.

A. L. Geylin, freight solicitor, Pennsylvania Railroad. Headquarters, Harrisburg, Pa.

W. T. Henry, general attorney, Missouri Pacific and St. Louis, Iron Mountain and Southern in Texas.

Edward W. Hines, examiner-attorney, Interstate Commerce Commission.

Sam A. Leake, general attorney, Missouri Pacific and the St. Louis, Iron Mountain and Southern in Texas.

Arthur B. Pugh, examiner-attorney, Interstate Commerce Commission.

E. H. Wigand, soliciting agent, Louisville and Nashville Railroad. Headquarters, Memphis, Tenn.

Financial.

I. W. Booth, assistant secretary, Norfolk and Western Railway. Headquarters, Philadelphia, Pa.

Kirke Lathrop, treasurer, San Francisco-Oakland Terminal Railways. Headquarters, Oakland, Cal.

Robert Morrison, Jr., secretary, San Francisco-Oakland Terminal Railways. Headquarters, Oakland, Cal.

Frederick S. Wynn, secretary, Southern Railway. Headquarters, New York.

Accounting.

C. C. Barry, auditor, San Pedro, Los Angeles & Salt Lake Railway. Headquarters, Los Angeles, Cal.

O. H. Bower, auditor, Missouri, Kansas and Texas Railway. Headquarters, Dallas, Texas.

R. J. Dillon, auditor, Houston and Brazos Valley Railroad. Headquarters, Freeport, Texas.

F. J. Easton, auditor, Rutland Railroad.

H. M. Hood, comptroller, New Orleans, Mobile and Chicago Railroad. Headquarters, Mobile, Ala.

G. C. Jackson, auditor of claims, Canadian Pacific Railway. Headquarters, Montreal, Que.

C. W. Keeling, auditor, Danville and Western Railway. Headquarters, Danville, Va.

L. L. Knight, auditor, Macon, Dublin & Savannah. Headquarters, Macon, Ga.

James T. Leary, comptroller, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

F. L. McCaffery, auditor of disbursements, Southern Pacific. Headquarters, San Francisco, Cal.

G. W. Mulks, assistant controller, Southern Pacific Co. Headquarters, New York.

P. L. Overman, freight auditor, Western Maryland. Headquarters, Baltimore, Md.

F. W. Pope, auditor of freight accounts, Southern Pacific Company. Headquarters, San Francisco, Cal.

Edgar A. Richard, acting auditor, Pacific and Idaho Northern Railway and the Central Idaho Telegraph and Telephone Company. Headquarters, Meadows, Idaho.

J. O. Talbot, auditor of receipts, Missouri, Kansas and Texas Railway. Headquarters, Dallas, Texas.

Engineering and Mechanical.

Francis H. Adams, senior mechanical engineer, division of valuation, Interstate Commerce Commission. Headquarters, Kansas City, Mo.

C. D. Ashmore, master mechanic, Chicago & North Western Railway. Headquarters, Clinton, Iowa.

William G. Atwood, assistant district engineer, Division of Valuation, Interstate Commerce Commission. Headquarters, Chattanooga, Tenn.

J. C. Auten, principal assistant engineer, Philadelphia, Baltimore and Washington. Headquarters, Wilmington, Del.

G. R. Barry, division engineer, Pennsylvania

Lines West of Pittsburgh. Headquarters, Columbus, Ohio.

C. A. Bingaman, assistant engineer motive power, Philadelphia & Reading Railway. Headquarters, Reading, Pa.

R. L. Black, general foreman, Norfolk and Western Railway. Headquarters, Columbus, Ohio.

George H. Bremner, assistant district engineer of the board ot valuation engineers, Interstate Commerce Commission.

William E. Brown, supervisor of division No. 20, Pennsylvania Railroad. Headquarters, Hollidaysburg, Pa.

W. S. Butler, master mechanic, Huntington and Big Sandy divisions, Chesapeake and Ohio and the Chesapeake and Ohio of Indiana. Headquarters, Huntington, W. Va.

F. I. Cabell, chief engineer, Chesapeake and Ohio and the Chesapeake and Ohio of Indiana. Headquarters, Richmond, Va.

C. J. Chenworth, engineer of roadway, Atlantic Coast Line. Headquarters, Savannah, Ga.

D. C. Clough, master mechanic, Oregon Electric and the United Railways. Headquarters, Portland, Oregon.

J. K. Conner, chief engineer, Lake Erie and Western and the Northern Ohio. Headquarters, Indianapolis, Ind.

J. E. Crawford, chief engineer, Norfolk and Western and the Williamson & Pond Creek. Headquarters, Roanoke, Va.

B. F. Crowley, supervisor of locomotive operation, Baltimore and Ohio. Headquarters, Wheeling, W. Va.

B. J. Dalton, assistant district engineer, Western district, Division of Valuation, Interstate Commerce Commission. Headquarters, Kansas City, Mo.

John Dickson, master mechanic, Spokane, Portland and Seattle Railway, Oregon Trunk Railway, Oregon Electric Railway and the United Railways. Headquarters, Portland, Oregon.

J. G. Dole, master mechanic, Alliance division, Chicago, Burlington and Quincy Railroad. Headquarters, Alliance, Neb.

R. M. Drake, maintenance of way assistant, Southern Pacific Company. Headquarters, San Francisco, Cal.

J. Dwyer, roadmaster, Portland division, Spokane, Portland and Seattle Railroad. Headquarters, Portland, Oregon.

C. C. Elmes, assistant engineer motive power, Reading Companies. Headquarters, Reading, Pa.

B. Ferris, acting general foreman, Detroit, Toledo and Ironton Railway. Headquarters, Delray, Mich.

Lewis D. Freeman, mechanical inspector, Seaboard Air Line. Headquarters, Portsmouth, Va.

J. A. Griffin, engineer of maintenance of way and structures, Georgia, Southern and Florida. Headquarters, Macon, Ga.

W. E. Grove, inspector car department, Philadelphia and Reading Railway. Headquarters, Reading, Pa.

E. B. Hall, assistant to the general superintendent of motive power and car departments, Chicago and North Western. Headquarters, Chicago, Ill.

O. G. Hartmann, mechanical foreman, Wisconsin & Michigan Railway. Headquarters, Peshtigo, Wis.

T. W. Heinzelman, general superintendent of motive power, Southern Pacific Company. Headquarters, San Francisco, Cal.

T. E. Hessenbruch, assistant general car inspector, Philadelphia and Reading Railway. Headquarters, Reading, Pa.

James E. Howard, engineer-physicist, safety appliance division, Interstate Commerce Commission.

C. W. Jones, engineer of branch lines, Chesapeake and Ohio Railway. Headquarters, Richmond, Va.

John Karibo, division master mechanic, Cleveland, Cincinnati, Chicago & St. Louis Ry. Headquarters, Mattoon, Ill.

R. F. Laift, head of architectural department, Central district, division of valuation, Interstate Commerce Commission. Headquarters, Chicago, Ill.

T. F. Laist, chief of the architectural department, Holabird and Roche Railway. Headquarters, Chicago, Ill.

William Lanon, supervisor of locomotive operation, Arkansas, Indian Territory and Louisiana divisions, Rock Island Lines.

A. D. Millard, engineer, Chicago, Peoria and St. Louis. Headquarters, Jacksonville, Ill.

C. W. Montgomery, supervisor of division No. 5, Pennsylvania Railroad Company. Headquarters, Harrisburg, Pa.

D. J. Mullen, assistant to the superintendent of motive power, Cleveland, Cincinnati, Chicago and St. Louis. Headquarters, Indianapolis, Ind.

T. Nicholson, master mechanic, Louisiana Railway & Navigation Company. Headquarters, Shreveport, La.

George G. Ommanney, special engineer, to the president, Canadian Pacific. Headquarters, Winnipeg, Man.

H. Osborne, assistant mechanical superintendent, Canadian Pacific Railroad. Headquarters, Montreal, Que.

Alonzo G. Pack, assistant chief inspector of locomotive boilers, Interstate Commerce Commission.

E. I. Partlow, road foreman of engines, Indianapolis division, Baltimore and Ohio, Cincinnati, Hamilton and Dayton Lines. Headquarters Indianapolis, Ind.

F. M. Patterson, engineer of the Missouri district, Chicago, Burlington & Quincy R. R. Headquarters, St. Louis, Mo.

S. T. Patterson, supervisor of locomotive operation, Chicago terminal and Illinois divisions, Chicago, Rock Island and Pacific Railroad.

F. R. Pennyfather, master mechanic, Manitoba division, Canadian Pacific. Headquarters, Winnipeg, Man.

A. P. Prendergast, superintendent of machinery, Texas and Pacific Railway.

R. B. Rasbridge, superintendent car department, Philadelphia and Reading Railroad. Headquarters, Reading, Pa.

Raymond V. Reamer, engineer maintenance of way, Central division, Central of New Jersey Railroad. Headquarters, Jersey City, N. J.

J. C. Resch, assistant chief engineer, International and Great Northern. Headquarters, Houston, Texas.

D. Rounseville, engineer of maintenance, Chicago and North Western Railway.

Frederick F. Schaller, signal engineer of safety appliance division of the Interstate Commerce Commission.

Frank S. Sheetz, senior structural engineer in charge of bridge and building department, division of valuation, Interstate Commerce Commission. Headquarters, Kansas City, Mo.

Clifton B. Spencer, senior civil engineer, division of valuation, Interstate Commerce Commission. Headquarters, Kansas City, Mo.

E. Sullivan, roadmaster, Chicago, Rock Island and Pacific Railway. Headquarters, Washington, Iowa.

Herbert L. Thomas, division engineer, Pennsylvania Railroad. Headquarters, Elmira.

H. B. Titcomb, maintenance of way assistant, Southern Pacific Company. Headquarters, San Francisco, Cal.

George P. Turner, assistant engineer, assigned to valuation work, Union Pacific R. R. Headquarters, Omaha, Neb.

O. Walsh, superintendent of motive power, Georgia Railroad. Headquarters, Augusta, Ga.

A. C. Watson, division engineer, Pennsylvania Lines. Headquarters, Logansport, Ind.

F. H. Watts, division engineer, Pittsburgh division, Pennsylvania Lines West of Pittsburgh. Headquarters, Pittsburgh.

Frank S. Wheeler, division engineer, Erie R. R. Headquarters, Buffalo, N. Y.

Frederick Grant White, signal engineer, Chicago Great Western Railroad. Headquarters, Chicago, Ill.

H. C. Williams, chief engineer of contsruction, Louisville and Nashville Railroad. Headquarters, Louisville, Ky.

R. W. Willis, district engineer, Chicago, Burlington and Quincy R. R.

D. C. Wilson, electrical engineer, Union Pacific R. R. Headquarters, Omaha, Neb.

R. D. Wilson, general car inspector, Philadelphia and Reading Railway. Headquarters, Reading, Pa.

W. E. Woodhouse, superintendent of motive power, Eastern Lines, Canadian Pacific. Headquarters, Winnipeg, Man.

T. W. Younger, superintendent of motive power, Northern district, Southern Pacific Company. Headquarters, Sacramento, Cal.

Operation.

C. W. Akers, superintendent, Western division, Norfolk, Southern Railroad. Headquarters, Raleigh, N. C.

W. H. Andrews, general manager, Georgetown and Western Railroad. Headquarters, Georgetown, S. C.

Frank D. Austin, manager, Mt. Jewett Route, Baltimore and Ohio and Erie Railroads. Headquarters, New York.

F. R. Bartles, superintendent, Fargo division, Northern Pacific Railway.

J. M. Baths, division superintendent, Chicago, Indianapolis and Louisville Railroad. Headquarters, Lafayette, Ind.

J. D. Beaver, superintendent, Pittsburgh, Shawmut and Northern Railroad. Headquarters, St. Mary's, Pa.

W. D. Beck, superintendent of passenger terminals, Chicago and North Western Railway. Headquarters, Chicago, Ill.

H. C. Bixler, acting superintendent, Philadelphia terminal division, Pennsylvania Railroad. Headquarters, West Philadelphia, Pa.

H. A. Boomer, general manager, Lake Erie and Western Railroad. Headquarters, Indianapolis, Ind.

G. A. Bradley, superintendent, Raleigh, Charlotte and Southern Railway. Headquarters, Raleigh, N. C.

J. N. Brand, general superintendent, Third division, Atlantic Coast Line. Headquarters, Jacksonville, Fla.

H. H. Brigham, manager, Nickel Plate-Lackawanna Dairy Line. Headquarters, Chicago, Illinois.

C. H. Bristol, acting general superintendent, Northern district, Atchison, Topeka and Santa Fe Ry. Headquarters, La Junta, Colo.

T. B. Burgess, trainmaster, Chicago division, Baltimore and Ohio Railroad. Headquarters, Garrett, Ind.

James Burke, superintendent, Chicago Terminal division, Erie Railroad. Headquarters, Cleveland, Ohio.

S. E. Burkhead, assistant general manager, International and Great Northern Railway.

C. E. Burr, general superintendent of transportation, Delaware and Hudson Company. Headquarters, Albany, N. Y.

John W. Byng, general manager, Kansas City, Ozark and Southern Railway. Headquarters, Ava, Mo.

D. W. Campbell, assistant general manager, Southern Pacific. Headquarters, Portland, Oregon.

C. E. Carson, superintendent, Ft. Dodge, Des Moines and Southern Railway. Headquarters, Boone, Iowa.

J. R. Cary, general superintendent, Chesapeake and Ohio Ry. Headquarters, Clifton Forge, Va.

J. R. Cavanaugh, superintendent of car service, Cleveland, Cincinnati, Chicago and St. Louis Railway.

J. M. Chandler, superintendent, Red River division, St. Louis and San Francisco Railroad. Headquarters, Francis, Okla.

Charles Chandler, trainmaster, Southern Railway. Headquarters, Birmington, Ala.

D. J. Clarke, trainmaster, Chicago, Indianapolis and Louisville Railroad. Headquarters, Lafayette, Ind.

G. A. Coleman, acting trainmaster, Chicago, Peoria and St. Louis. Headquarters, Springfield, Ill.

T. B. Coppage, superintendent transportation, St. Louis and San Francisco R. R. Headquarters, Fort Scott, Kansas.

William Coughlin, general manager, Missouri, Oklahoma and Gulf Railway. Headquarters, Muskogee, Okla.

M. Crown, superintendent of terminals, Atlantic Coast Line R. R. Headquarters, Jacksonville, Fla.

J. M. Davis, assistant general manager, Baltimore and Ohio Southwestern R. R. and the Cincinnati, Hamilton and Dayton Railway. Headquarters, Cincinnati, Ohio.

W. H. DeFrance, division superintendent, Texas and Pacific. Headquarters, New Orleans, La.

J. H. Doggrell, assistant superintendent transportation, St. Louis and San Francisco R. R. Headquarters, Springfield, Mo.

L. M. Dooley, transportation inspector, Texas and Pacific Railway. Headquarters, New Orleans, La.

W. C. Downing, general superintendent, Central System of the Pennsylvania Lines West of Pittsburgh. Headquarters, Toledo, Ohio.

Abiel D. Edgar, assistant superintendent, New Jersey Central division, Central of New Jersey Railroad. Headquarters, Jersey City, N. J.

Edward J. Edmunds, trainmaster, the Erie. Headquarters, Buffalo, N. Y.

W. J. Edwards, superintendent, Alabama Great Southern Railroad. Headquarters, Birmingham, Ala.

A. C. Elston, superintendent, New York division, Erie Railroad. Headquarters, Jersey City, N. J.

J. A. Emmart, superintendent, Georgetown and Western Railroad. Headquarters, Georgetown, S. C.

R. H. England, general manager, Kanawha & West Virginia Railroad. Headquarters, Charleston, W. Va.

Frank J. Evans, superintendent, Pecos division, Atchison, Topeka and Santa Fe Railway. Headquarters, Clovis, N. M.

John K. Fahey, superintendent of terminals, Morgan's Louisiana & Texas R. R. and Steamship Company. Headquarters, New Orleans, Louisiana.

H. G. Farrar, superintendent, Columbus division, Southern Railway. Headquarters, Williamson, Ga.

J. Fitzgerald, assistant trainmaster, Baltimore and Ohio Railroad. Headquarters, Cleveland, Ohio.

Frank Fitzpatrick, assistant trainmaster, International and Great Northern Railway. Headquarters, Valley Junction, Texas.

W. H. Fogg, division superintendent, Chicago, Indianapolis and Louisville Railroad. Headquarters, Lafayette, Ind.

J. F. Frazer, assistant superintendent, River and Cape division, St. Louis and San Francisco R. R. Headquarters, Chaffee, Mo.

R. S. Goodrich, transportation inspector, Atchison, Topeka and Santa Fe Coast Lines. Headquarters, Winslow, Ariz.

B. Haggard, trainmaster, Northern Alabama Railway. Headquarters, Sheffield, Ala.

Thomas B. Hamilton, general manager, the Vandalia Railroad. Headquarters, St. Louis, Mo.

R. R. Harris, superintendent of freight transportation, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Indianapolis, Ind.

W. C. Herbert, trainmaster, Southern Railway. Headquarters, Richmond, Va.

C. L. Hinkle, general superintendent, Toledo, St. Louis and Western Railroad.

C. F. Hopkins, superintendent, Southwestern division, St. Louis and San Francisco R. R. Headquarters, Sapulpa, Okla.

John R. Jones, superintendent, San Antonio division, International and Great Northern Railway. Headquarters, San Antonio, Texas.

J. F. Keefe, assistant superintendent, Northern division, Central Vermont Railroad. Headquarters, St. Albans, Vt.

E. E. Kerwin, general superintendent, Minneapolis and St. Louis R. R. Headquarters, Minneapolis, Minn.

E. L. King, superintendent of telegraph, Southern Pacific Company. Headquarters, San Francisco, Cal.

E. G. Knapp, assistant trainmaster, Pennsylvania Lines. Headquarters, Carbondale, Penna.

Charles L. Krick, superintendent, Philadelphia terminal division, Pennsylvania Railroad. Headquarters, West Philadelphia, Pa.

George LeBoutillier, superintendent, Richmond division, Pittsburgh, Cincinnati, Chicago & St. Louis.

C. S. Leiper, superintendent, New York, Philadelphia and Norfolk Railroad. Headquarters, Cape Charles, Va.

Edward D. Levy, general manager, St. Louis and San Francisco Railroad. Headquarters, St. Louis, Mo.

J. C. Lewis, acting superintendent, Central division, Norfolk Southern Railway. Headquarters, New Bern, N. C.

J. T. Loree, trainmaster, Pennsylvania Lines. Headquarters, Oneonta, New York.

T. F. Lowry, superintendent, Minnesota division, Northern Pacific Railway.

O. H. McCarty, superintendent, Northern division, St. Louis and San Francisco Railroad. Headquarters, Fort Scott, Kansas.

R. A. McCranie, general superintendent, Atlantic Coast Line. Headquarters, Savannah, Ga.

J. C. McCullough, superintendent of the Pittsburgh division, Pennsylvania Lines West of Pittsburgh. Headquarters, Pittsburgh, Pa.

J. McGuire, assistant superintendent, Portland division, Spokane, Portland and Seattle. Headquarters, Portland, Ore.

S. E. McKenney, terminal trainmaster, Central Vermont Railroad. Headquarters, St. Albans, Vermont.

A. W. McLimont, general manager, San Francisco-Oakland Terminal Railways. Headquarters, Oakland, Cal.

J. E. McMahon. superintendent, Colorado division, Atchison, Topeka and Santa Fe Railroad. Headquarters, Pueblo, Colo.

P. L. McManus, general superintendent, Chicago, Indianapolis and Louisville Ry. Headquarters, Lafayette, Ind.

M. Magiff, superintendent of car service, Central Vermont Railway. Headquarters, St. Albans, Vt.

H. T. Malcolmson, superintendent of car service, Toronto, Hamilton and Buffalo. Headquarters, Hamilton, Ont.

C. T. Mason, superintendent, Western division, St. Louis and San Francisco Railroad. Headquarters, Enid, Okla.

R. V. Massey, superintendent, Manhattan division, Pennsylvania Railroad. Headquarters, New York.

J. W. Meredith, general superintendent, New Jersey Southern division of the Central of New Jersey. Headquarters, East Long Branch, N. J.

Arthur L. Mills, general manager, Ft. Smith and Western. Headquarters, Ft. Smith, Ark.

C. A. Morgan, superintendent, Carbondale division, Pennsylvania Lines. Headquarters, Carbondale, Pa.

B. C. Mulhern, general superintendent, Pittsburgh, Shawmut and Northern R. R. Headquarters, St. Mary's, Pa.

H. V. Platt, assistant general manager, Southern Pacific. Headquarters, Los Angeles, Cal.

G. E. Reel, trainmaster, Cincinnati, Hamilton and Dayton Railway. Headquarters, Lima, Ohio.

Morton Riddle, general manager, Florida East Coast Railway. Headquarters, St. Augustine, Fla.

H. W. Rives, superintendent, Deering Southwestern. Headquarters, Caruthersville, Mo.

J. J. Rounds, trainmaster, Pennsylvania Lines. Headquarters, Carbondale, Pa.

D. C. Rounseville, engineer of maintenance, Chicago and North Western Lines east of Missouri River. Headquarters, Chicago, Ill.

J. Russell, general superintendent, Western district, Great Northern Railway. Headquarters, Seattle, Wash.

S. S. Russell, superintendent, Northern division, Central Vermont Railway. Headquarters, St. Albans, Vt.

E. W. Sandwich, superintendent of car service, Atlanta and West Point and the Western Railway of Alabama. Headquarters, Atlanta, Ga.

W. D. Scott, general superintendent, Spokane, Portland & Seattle Railway and the Oregon Trunk Line Railway. Headquarters, Portland, Oregon.

C. H. Shircliffe, superintendent of dining and parlor cars, Chicago and North Western Railway. Headquarters, Chicago, Ill.

Charles H. Stein, superintendent, New Jersey Central and the Lehigh & Susquehanna divisions of the Central of New Jersey. Headquarters, Jersey City, N. J.

J. R. Stem, trainmaster, Chicago, Indianapolis and Louisville Railroad. Headquarters, Lafayette, Ind.

J. P. Stevens, general superintendent, Central general division, Chesapeake and Ohio and the Chesapeake and Ohio of Indiana. Headquarters, Huntington, W. Va.

M. W. Sullivan, assistant trainmaster, Pennsylvania Lines. Headquarters, Oneonta, New York.

John T. Taffany, trainmaster, Erie Railroad. Headquarters, Buffalo, N. Y.

B. E. Terpning, superintendent, East Iowa division, Chicago and North Western. Headquarters, Belle Blaine, Iowa.

F. J. Thomure, general manager, Mississippi River and Bonne Terre Railway. Headquarters, Bonne Terre, Mo.

Henry W. Thornton, general manager, Great Eastern Railway of England. Headquarters, London.

George F. Turley, general manager, Virginia-Carolina Railway and the New River, Holston and Western R. R. Headquarters, Abington, Va.

A. E. Walker, superintendent, Louisiana division, Chicago, Rock Island and Pacific Railway. Headquarters, Eldorado, Ark.

William Walliser, assistant to general manager, Chicago and North Western Ry. Headquarters, Chicago, Ill.

O. T. Waring, superintendent, Waycross district, Atlantic Coast Line. Headquarters, Waycross, Ga.

F. G. White, signal engineer, Chicago Great Western Railroad. Headquarters, Chicago, Ill.

E. Wilson, superintendent, Fort Worth division, International and Great Northern Ry. Headquarters, Mart, Texas.

Samuel B. Zartman, superintendent, New Jersey Southern division of the Central of New Jersey. Headquarters, East Long Branch, N. J.

Traffic.

W. H. Abel, assistant passenger traffic manager, Chicago and Alton Railroad. Headquarters, St. Louis, Mo.

W. H. Alexander, assistant general freight agent, Missouri Pacific Iron Mountain System. Headquarters, St. Louis, Mo.

C. M. Andrews, traveling freight and passenger agent, Southern Pacific Company. Headquarters, Seattle, Wash.

H. E. Arnold, commercial agent, New York Central and Hudson River and the West Shore. Headquarters, Lowell, Mass.

W. S. Battle, Jr., assistant general claim agent, Norfolk and Western Railway. Headquarters, Roanoke, Va.

N. A. Beach, commercial agent, Missouri Pacific-Iron Mountain System. Headquarters, St. Joseph, Mo.

W. L. Bettis, agent, Baltimore and Ohio, and Cincinnati, Hamilton and Dayton Lines. Headquarters, Georgia, Ind.

J. P. Billups, general passenger agent, Georgia Railroad. Headquarters, Augusta, Ga.

D. W. Bird, commercial agent, Louisiana & Arkansas Railway. Headquarters, Little Rock, Ark.

J. H. Boodro, traveling freight agent, Illinois Central Railroad. Headquarters, Carbondale, Ill.

S. W. Bradford, commercial agent, Missouri Pacific, Iron Mountain & Southern, Denver & Rio Grande and Western Pacific Railways. Headquarters, Texarkana, Ark.-Tex.

F. G. Browder, Jr., assistant general freight agent, Atlanta and West Point R. R. and the Western Railway of Alabama. Headquarters, Montgomery, Ala.

F. W. Brown, traffic manager, San Francisco-Oakland Terminal Rys. Headquarters, Oakland, Cal.

Orno M. Brown, contracting agent, El Paso and Southwestern System. Headquarters, Chicago, Ill.

Z. T. Bynum, Jr., soliciting freight agent, Norfolk and Western Railway. Headquarters, Winston-Salem, N. C.

Nathan G. Campbell, general agent, Central Railroad of New Jersey. Headquarters, Newark, N. J.

W. N. Carmody, commercial agent, Missouri Pacific-Iron Mountain System. Headquarters, Fort Scott, Kansas.

C. L. Chapman, assistant general traffic manager, the Erie. Headquarters, New York.

Robert Charlton, commercial agent, Minneapolis and St. Louis Railroad. Headquarters, Duluth, Minn.

R. M. Chastain, commercial freight agent, Missouri Pacific, St. Louis, Iron Mountain and Southern, Denver & Rio Grande and the Western Pacific Railways. Headquarters, Monroe, La.

Asa B. Clark, division freight agent, the Erie Railroad. Headquarters, New York City.

E. R. Coleman, division freight agent, Pittsburgh, Cincinnati, Chicago and St. Louis. Headquarters, Cincinnati, Ohio.

John P. Collins, traveling freight agent, New York Central and Hudson River and the West Shore. Headquarters, Lowell, Mass.

T. B. Coppage, superintendent of transportation, St. Louis and San Francisco Railroad. Headquarters, Springfield, Mo.

John N. Cornatzer, general passenger agent, St. Louis and San Francisco. Headquarters, Memphis, Tenn.

George H. Cornell, traveling passenger agent, Southern Pacific Company. Headquarters, Los Angeles, Cal.

J. D. Cornell, general freight and passenger agent, Rock Island Southern Railway. Headquarters, Davenport, Iowa.

D. M. Crawford, commercial agent, Grand Trunk Railway System. Headquarters, Pittsburgh, Pa.

R. B. Crocker, traveling freight and passenger agent, El Paso and Southwestern System. Headquarters, Chicago, Ill.

J. M. Crute, assistant general freight and passenger agent, Ocilla Southern Railroad. Headquarters, Ocilla, Ga.

D. A. Davies, commercial agent, El Paso and Southwestern System. Headquarters, Detroit, Mich.

S. E. Dewey, commercial agent, Grand Trunk Railway System. Headquarters, New York.

G. H. Dougherty, soliciting freight agent, Kansas City Southern Railway. Headquarters, Beaumont, Texas.

G. W. Feakins, general agent, El Paso & Southwestern Railroad. Headquarters, St. Louis, Mo.

C. L. Ferrall, division freight agent, Pennsylvania Company. Headquarters, Cambridge, Ohio.

Edward R. Ferry, general agent, Illinois Central Railroad and the Yazoo and Mississippi Valley Railroad. Headquarters, New Orleans, La.

Frank Fouts, general agent, Denver and Rio Grande Railroad. Headquarters, Ogden, Utah.

A. J. Fox, assistant general freight agent, Seaboard Air Line. Headquarters, Jacksonville, Fla.

C. A. Francois, contracting freight agent, Illinois Central Railroad. Headquarters, Minneapolis, Minn.

J. B. Gibson, traveling freight agent, Chicago, Rock Island and Pacific Railway. Headquarters, Houston, Texas.

James Gordon, agent, Baltimore and Ohio and Cincinnati, Hamilton and Dayton Lines. Headquarters, Nebraska, Ind.

C. E. Gordy, traveling freight agent, Western Maryland Railway. Headquarters, Baltimore, Md.

Robert T. Gourley, freight solicitor, Star Union Line. Headquarters, St. Paul, Minn.

H. S. Gray, division passenger agent, Illinois Central. Headquarters, Dubuque, Iowa.

A. C. Green, contracting freight agent, Illinois Central Railroad. Headquarters, Cleveland, Ohio.

E. O. Griffin, general fuel and supply agent, International and Great Northern Railway. Headquarters, Palestine, Texas.

F. L. Hanna, general agent, Atchison, Topeka and Santa Fe Coast Lines. Headquarters, Oakland, Cal.

J. F. Harris, assistant general freight agent, St. Louis, Iron Mountain and Southern Railway. Headquarters, St. Louis, Mo.

Rush R. Harris, superintendent of freight transportation, Cleveland, Cincinnati, Chicago and St. Louis, the Peoria, and Eastern and the Cincinnati Northern. Headquarters, Indianapolis, Ind.

Russell Hebbethwaithe, district passenger agent, Queen and Crescent Route. Headquarters, Indianapolis, Ind.

J. F. Hennessy, Jr., soliciting freight agent, Missouri, Kansas and Texas. Headquarters, Houston, Texas.

W. P. Hinton, passenger traffic manager, Grand Trunk Pacific Railroad. Headquarters, Winnipeg, Man.

E. G. Hitt, division freight agent, Atlanta and West Point Railroad. Headquarters, Montgomery, Ala.

C. P. Hoch, traveling freight agent, Kansas City Southern Railway. Headquarters, New York.

J. F. Hogan, general agent, El Paso and Southwestern System. Headquarters, Kansas City, Mo.

G. V. Holton, traveling freight agent, Illinois Central. Headquarters, Indianapolis, Ind.

J. W. Howe, coal freight agent, Chesapeake & Ohio Railway and the Chesapeake and Ohio Railway of Indiana. Headquarters, Richmond, Va.

L. B. Johnson, commercial agent, Norfolk Southern Railroad. Headquarters, Charlotte, N. C.

D. H. Kelly, cold storage and transfer agent, Pennsylvania Lines. Headquarters, Albany, New York.

C. L. Kennedy, commercial agent, Chicago, Milwaukee and St. Paul Railway. Headquarters, St. Paul, Minn.

Garrett King, general passenger agent, El Paso and Southwestern Railroad. Headquarters, El Paso, Texas.

John J. Koch, assistant freight traffic manager, Pennsylvania Lines West of Pittsburgh. Headquarters, Pittsburgh, Pa.

J. B. Macpherson, chief of tariff bureau, Grand Trunk Railway. Headquarters, Montreal, Que.

D. C. MacDonald, assistant general claim agent, for western lines, Canadian Pacific Railroad. Headquarters, Nelson, B. C.

Guy S. McCabe, general freight agent, Pennsylvania Lines West of Pittsburgh. Headquarters, Pittsburgh, Pa.

F. J. McEnany, general agent, Central Vermont Railroad. Headquarters, St. Albans, Vt.

George E. Mace, traveling freight agent, New York Central and Hudson River and the West Shore. Headquarters, Lowell, Mass.

A. Mallum, acting commercial agent, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Duluth, Minn.

S. C. Matthews, assistant general freight agent, Pennsylvania Company. Headquarters, Pittsburgh, Pa.

J. M. Morisey, district passenger agent, Illinois Central. Headquarters, Dubuque, Iowa.

W. C. Mueller, general agent, passenger department, Chicago and Alton Railroad. Headquarters, Kansas City, Mo.

W. F. Mundee, commercial agent, Macon, Dublin and Savannah Railroad. Headquarters, Jacksonville, Fla.

R. L. Murphy, tie and timber agent, Cincinnati, New Orleans and Texas Pacific and the Alabama Great Southern. Headquarters, Cincinnati, Ohio.

W. C. O'Dwyer, traffic manager, New Orleans, Mobile and Chicago Railroad. Headquarters, Mobile, Ala.

Fred D. Ogden, traveling freight and passenger agent, El Paso and Southwestern System. Headquarters, San Francisco, Cal.

Frank E. Otis, assistant general freight agent, Chicago, Milwaukee and St. Paul Railway. Headquarters, Minneapolis, Minn.

F. H. Owen, traveling freight agent, New York Central and Hudson River and West Shore. Headquarters, Greenfield, Mass.

A. J. Patton, traveling freight agent, Sunset-Central Lines, Southern Pacific Co. Headquarters, Houston, Texas.

J. R. Perry, contracting freight agent, El Paso and Southwestern System. Headquarters, Los Angeles, Cal.

R. W. Rigdon, commercial agent, Kansas City, Mexico and Orient Railway. Headquarters, Ft. Worth, Texas.

F. G. Savage, acting general freight and passenger agent, Mexico North Western Railroad. Headquarters, Ciudad Juarez, Chihuahua, Mexico.

F. E. Sawyer, special agent, Pennsylvania Company. Headquarters, Pittsburgh, Pa.

P. H. Scanlan, division freight and passenger agent, Northern Montana division, Chicago, Milwaukee and St. Paul. Headquarters, Great Falls, Mont.

B. E. Sells, commercial agent, Missouri Pacific Iron Mountain System. Headquarters, St. Joseph, Mo.

A. E. Sinclair, traveling freight agent, International and Great Northern Railway and the Texas and Pacific Railway. Headquarters, San Francisco, Cal.

Ingram T. Sparks, traveling freight and passenger agent, Southern Pacific Company and the Arizona Eastern Railroad. Headquarters, Phoenix, Ariz.

W. L. Stannard, general agent, freight and passenger departments, Chicago and North Western Railroad. Headquarters, Detroit, Mich.

F. W. Sterling, district freight agent, Canadian Pacific Railway. Headquarters, Nelson, B. C.

W. C. Teare, traveling freight agent, Seaboard Air Line. Headquarters, Cincinnati, Ohio.

Charles E. Thomas, Jr., soliciting freight agent, Seaboard Air Line. Headquarters, Baltimore, Md.

E. W. Trott, commercial agent, Missouri and North Arkansas Railroad. Headquarters, Joplin, Mo.

Russell S. Underwood, assistant to general traffic manager, the Erie. Headquarters, New York.

W. Van Valkenburgh, general baggage and mail agent, Long Island Railroad.

J. C. Venning, general ore and coal agent, Pittsburgh, Cincinnati, Chicago and St. Louis Railway. Headquarters, Pittsburgh, Pa.

T. P. Wade, commercial agent, Central of Georgia Railroad. Headquarters, Columbus, Ga.

B. H. Wallace, traveling freight agent, Louisville and Nashville Railroad. Headquarters, Buffalo, N. Y.

J. E. Weller, general western freight agent, North West System, Pennsylvania Lines West. Headquarters, Chicago, Ill.

James E. Welter, general western freight agent, Pennsylvania Company. Headquarters, Chicago, Ill.

George R. Wheeler, milk freight agent, Erie Railroad Company. Headquarters, New York.

H. W. Wheeler, assistant general freight agent, Belt Railway of Chicago. Headquarters, Chicago, Ill.

G. E. Whitelam, superintendent freight loss and damage claims, St. Louis and San Francisco Railroad.

C. D. Whitney, traffic manager, Chicago, Peoria and St. Louis Railroad. Headquarters, St. Louis, Mo.

H. M. Williams, traveling freight agent, Atlanta, Birmingham and Atlantic Railroad Headquarters, Cincinnati, Ohio.

J. W. Willis, general agent, Atlanta, Birmingham and Atlantic. Headquarters, Talladega, Ala.

Harry C. Wilmot, agent, freight department, New York, New Haven and Hartford. Headquarters, Bridgeport, Conn.

Industrial.

H. R. Buckley, agent, land and industrial department, Southern Railway. Headquarters, Bristol, Tenn.

C. H. Evans, industrial agent, Missouri, Kansas and Texas Railroad. Headquarters, St. Louis, Mo.

Purchasing.

Ross M. Blackburn, acting general storekeeper, Chicago and North Western Railway. Headquarters, Chicago, Ill.

Samuel F. Clark, purchasing agent and general storekeeper, Spokane, Portland and Seattle Railway. Headquarters, Portland, Oregon.

F. Davidson, purchasing agent, Chicago, Indianapolis and Louisville Ry.

C. T. Tillman, purchasing agent, South Georgia. Headquarters, Quitman, Ga.

Miscellaneous.

Winthrop M. Daniels, member, Interstate Commerce Commission.

Henry Clay Hall, member, Interstate Commerce Commission.

T. H. Hayes, chief clerk, president's office, Chicago, Indianapolis and Louisville Ry.

R. D. Rynder, chief examiner for the Interstate Commerce Commission.

George N. Brown, examiner, Interstate Commerce Commission.

RESIGNATIONS.

Executive.

W. G. Bierd, vice-president and general manager, Minneapolis and St. Louis Railroad.

Daniel Breck, vice-president and general manager, Missouri, Oklahoma and Gulf Railway.

Howard Elliott, chairman and member of the board of directors, Boston and Maine Railroad.

Morris McDonald, president, Boston and Maine Railroad.

J. K. Moffit, president, San Francisco-Oakland Terminal Railways.

A. H. Payson, president, Northwestern Pacific Railroad.

Frank A. Peil, assistant to president and assistant secretary, Portland and Seattle Railway.

John P. Ramsey, president, Chicago, Peoria & St. Louis Railway.

Joseph Wood, first vice-president, Pennsylvania Lines West of Pittsburgh.

B. A. Worthington, president, Chicago and Alton.

Legal.

C. E. Benton, general attorney, Missouri Pacific Railway.

Financial.

W. W. Charles, assistant treasurer, Tonopah and Goldfield Railroad.

Accounting.

F. C. Anderson, auditor, Missouri, Kansas and Texas Railway.

C. C. Barry, assistant controller, Southern Pacific Company.

T. B. Cowper, auditor, Danville and Western Railway.

C. C. Moore, auditor, Houston and Brazos Valley Railroad.

E. F. Pool, controller, Nashville, Chattanooga & St. Louis Ry.

F. W. Pope, auditor of receipts, Missouri, Kansas and Texas Railway.

W. T. Rowen, auditor of freight accounts, Southern Pacific Company.

J. C. Vison, auditor of miscellaneous accounts, Southern Pacific Company.

R. E. Williams, auditor, Texas and Pacific Railway.

Engineering and Mechanical.

F. S. Anthony, mechanical superintendent, Texas and Pacific Railway.

William G. Atwood, chief engineer, Lake Erie and Western and the Northern Ohio Railroad.

Joseph Beaumont, engineer of signals, Chicago Great Western Railroad.

H. Bortin, assistant engineer in charge of valuation, Union Pacific Company.

G. H. Bremner, engineer, Illinois district, Chicago, Burlington and Quincy Railroad.

G. H. Cumberland, division engineer, Oregon Short Line.

H. H. Decker, engineer of maintenance, lines east of the Missouri River, Chicago and North Western.

D. F. Fitzgerald, assistant superintendent of motive power, St. Louis and San Francisco Railroad.

R. B. Gandy, division engineer, Alabama division, Seaboard Air Line.

G. H. Hopkins, master mechanic, Oregon Electric and the United Railways.

DIVIDEND NOTICES.

Philadelphia Electric Company, 419 Market Street, Camden, N. J., February 17, 1914.

The Board of Directors have this day declared a quarterly dividend of one and three-quarters (1¾) per cent (being 39.375 cents a share) upon the paid in capital of the Company, payable March 14, 1914, to stockholders of record February 21, 1914.

H. C. LUCAS, Treas.

AMERICAN CAR AND FOUNDRY COMPANY.

New York, February 25, 1914.

PREFERRED CAPITAL STOCK.

DIVIDEND NO. 60.

A dividend of one and three-quarters per cent (1¾%) on the Preferred Stock of this company has this day been declared, payable Wednesday, April 1, 1914, to stockholders of record at the close of business Tuesday, March 10, 1914.

Checks will be mailed by the Guaranty Trust Company of New York.

S. S. DeLano, Treasurer.
Wm. M. Hager, Secretary.

AMERICAN CAR AND FOUNDRY COMPANY.

New York, February 25, 1914.

COMMON CAPITAL STOCK.

DIVIDEND NO. 46.

A dividend of one-half per cent (½%) on the Common Stock of this Company has this day been declared, payable Wednesday, April 1, 1914, to stockholders of record at the close of business, Tuesday, March 10, 1914.

Checks will be mailed by the Guaranty Trust Company of New York.

S. S. DeLano, Treasurer.
Wm. M. Hager, Secretary.

Freight Rates

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This new book, the first of its kind ever published, tells **why the rates are in the tariffs** and **how** to find and use them. It explains the GROUP RELATION THEORY, THE DIFFERENTIAL BASIS, THE BASING POINT SYSTEM, THE MILEAGE SCALE, ETC. It is illustrated by current rate applications.

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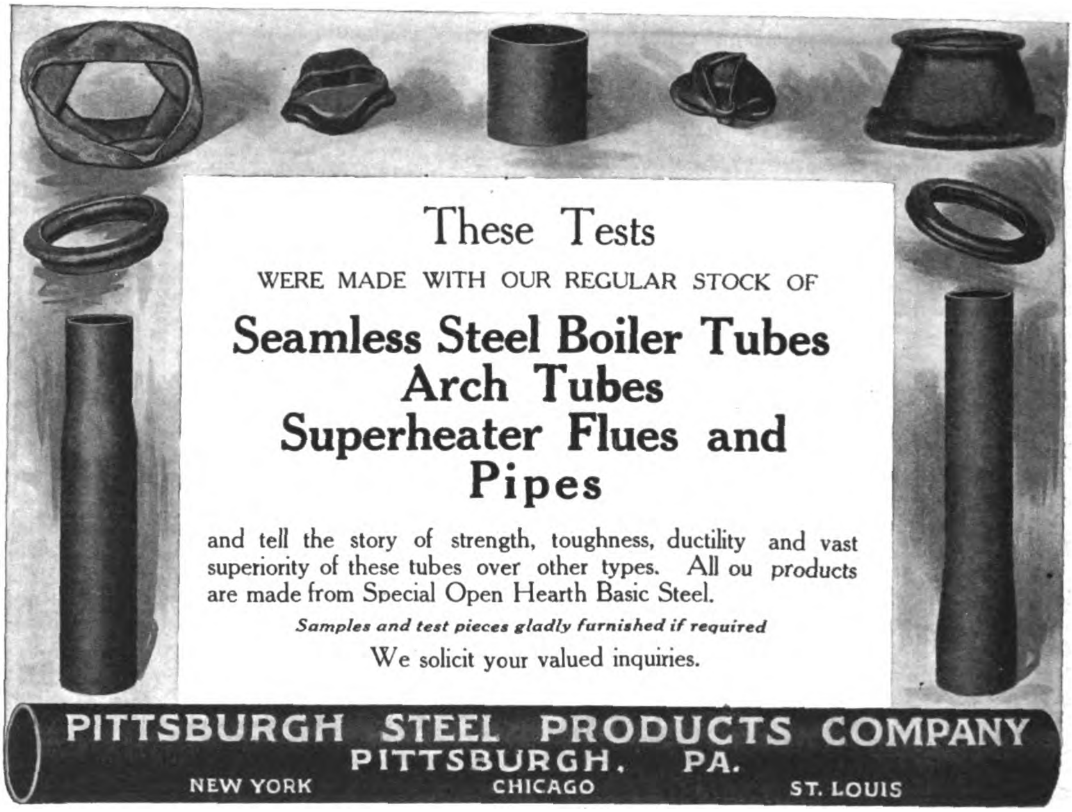

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THE WOODING AUTOMATIC TRAIN STOP

This device is recognized by all Engineers as being far superior to any *other*.

It is operated by the **closed electrical circuit** which is the **only reliable means** for operating **any** automatic device. This *necessitates* a **contact.**

Our contact is a **covered split rail.** It is the **smallest,** gives the **greatest clearance,** makes the **best contact,** and is **weather-proof.**

The train contact is a strong ***steel blade*** that offers the **least** obstruction and **makes** the **best knife blade electrical connection.**

All agree *that the* ***wrecks*** *on roads* **equipped** with the **block signals are due** to the **human failure, demonstrating positively** the **reliability** and **necessity** for the **automatic train stop.**

Our Government for the people says through the Interstate Commerce Commission that the **automatic train stop** is the **only way to prevent wrecks.**

If indemnity in **case** of **accidents** can be **secured** against a railroad on the **ground** of ***negligence*** *in not having* the block signal installed, as shown in the February edition of the Signal Engineer, **what chance has** a road to **escape** the **greater penalty** *for not* ***installing*** the **Automatic Train Stop which** is the **universally recognized protection?**

The automatic train stop has proven to be the **greatest** ***desciplinarian.*** It **protects** the **long faithful employees** from the **mistakes** they **naturally will make,** and *the* ***employer*** from the **loss** of **his best men** in trying to effect the **present** day **impractical** discipline.

Our device can be *installed* at a **minimum expense** in the **closed circuits** of the present day unreliable distant signalling system and **make** it **absolutely safe, or** independently, including *local signals* superior to the present block system, for **one-half** the **cost** of the latter.

This device is a **convenience,** and a **practical insurance *against* accidents** that **no railroad** can **afford to be without.**

We stand ready to demonstrate *every claim* made for our device on any railroad at our own expense.

THE WOODING RAILWAY WARNING DEVICE COMPANY,
B. F. Wooding, *President.*
Denver, Colo.

See illustrations and descriptive *matter* in the January number. Models on exhibition, Grand Central Terminal, New York City.

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Railway World

VOL. LVIII. APRIL, 1914 No. 4

Important Developments in the Transportation Field

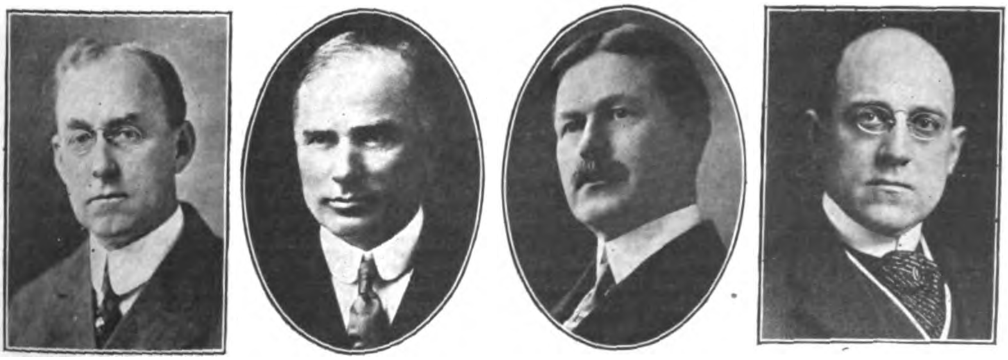
ANNUAL BANQUET OF PITTSBURGH TRAFFIC CLUB

The twelfth annual banquet of the Traffic Club of Pittsburgh which was held on the evening of March 27th, proved to be by far the most notable and brilliant function yet held by this progressive organization. Guests were present from practically all parts of the United States and from abroad. The decorative effects were superb. The speakers' table occupied the stage of the hall, the front being transformed into the semblance of a garden wall over which climbed flowering vines, while the back was a trellis, also carrying vines. Surmounting all was a key, the Club's emblem, outlined in electric lights. At either end of the table, was a magnificent basket of roses with a bed of tulips extending from end to end, through the center. Each of the sixty-odd tables for Club members and their guests, placed on the main floor, bore a large basket of luscious fruit, while delicate greenery decorated the cloth, the effect produced being at once novel and beautiful. The balcony and corners of the room were banked with ferns, palms and potted plants, while cut flowers were everywhere in profusion. President Elmer C. Sattley presided, and Dr. Francis Harvey Green, of the West Chester Normal School, acted as toastmaster. The principal speakers of the evening were Daniel Willard, president of the Baltimore and Ohio Railroad Company, and John Barrett, director-general of the Pan-American Union.

After the banquet, Mr. Sattley opened the proceedings by briefly extending a cordial greeting to those present. He spoke of the assemblage as being so magnificent in its representation as to be almost awe inspiring.

In introducing the speakers of the evening, Dr. Green called attention to that sentence from some unknown source which says: "He who writes the history of civilization will write the history of transportation." Continuing, he said:

> You gentlemen are the civilizing forces of mankind, you are men that make things go; you are people whose "back bone comes to the front; you are men obedient to the injunction savoring somewhat of slang but none the less impressive, "Get a move on, get busy, step lively and watch your step." Such people are the ones most worth while to the world. "The busy world shoves angrily aside the man who stands with arms akimbo and waits occasion to tell him what to do."
>
> It is well worth while, however, in the midst of the hurry and rush of life for business men to assemble on occasions of this sort and touch elbows with each other in a genial happy mood with the strain and stress of business for the time being largely thrown off. Blessed is it when "good fellows get together," and in a friendly spirit join in having a jolly time. Another thing that leads me to like to mingle with men of the type that makes up this group is that there is so much of the element of unselfishness about your work. You remember the other fellow and



FRANCIS H. GREEN. DANIEL WILLARD. ELMER C. SATTLEY. JOHN BARRETT.

Men who took a prominent part at the 12th Annual Banquet of the Traffic Club of Pittsburgh, held on the evening of March 27th.

reach out a hand of helpfulness toward him. Selfishness is as much hell as war.

He then introduced President Willard of the Baltimore and Ohio, and the spontaneous burst of applause which greeted this popular chief executive must have left no doubt in his heart as to the esteem in which he is held by those who are best able to judge of the manner in which he has disposed of his heavy responsibilities since becoming the head of one of the Nation's greatest transportation systems.

The immediate and pressing necessities of the railroads, constituted the theme of President Willard's address, and upon it he predicated a strong and earnest plea for higher rates for transporting freight. His argument, fortified by statistical data, appeared incontrovertible.

He said in part:

"In the present rate case it has been shown that 35 roads in official classification territory have actually added to their property investment since 1910, for additional facilities and equipment, over $659,000,000, but as a result of operations in 1913, although the gross earnings of the 35 railroads were $186,775,000 greater than in 1910, the net earnings after paying operating expenses and taxes, were actually $16,311,000 less than in 1910, showing that not only had these particular companies failed to earn any return whatever upon the new capital invested, but they actually had $16,311,000 less net as return upon their previous investment, than was the case before the large additional amount of money had been put into the plant, and of course it is unnecessary to say to you, as business men, that no business enterprise can continue on such basis,

"Men having money to invest will not put it in railroads unless they believe that money so invested will upon the whole bring as safe and satisfactory return as might be expected if invested in other directions, and railroad investments must be made sufficiently attractive to secure new capital, else development, which means new cars, new engines, new stations, new tracks and other facilities will cease, and nothing can more effectually check, if not absolutely stop the growth of commerce than insufficient transportation facilities.

"How may the new capital needed be obtained? How may railroad investments be made attractive? By permitting the railroads to impose such reasonable charges for service performed as will, with economical and intelligent operation, yield sufficient net to pay fair and reasonable return upon the capital required.

"It has been frequently stated that the railroads, or at least some of them, are incompetently and dishonestly managed.* It has developed in certain instances, I regret to say, that men holding official positions with railroads have been unfaithful to their trusts; conditions of extravagance have developed in localities, and uneconomical methods have been disclosed. However, as matters exist to-day, the railroads are obliged to keep their accounts in accordance with methods prescribed by the Interstate Commerce Commission. Under such conditions, it is practically impossible for dishonest methods to be followed for any considerable length of time without detection, and in this connection I wish to state in the strongest manner possible that in my opinion there is no more efficient, high minded or honorable body of men to be found anywhere, than those who to-day constitute the official staff of the American railroads.

"I do not claim they are better than other men; I do assert, however, that they are just as good, and my belief is based upon an intimate knowledge of an acquaintanceship with the men in mind of more than thirty years' duration. * * *

"It should be remembered that the railroad, quite unlike the ordinary manufacturing or business enterprise, extends over many miles of country, and its operations on that account are extremely difficult to supervise; and because of its public character the railroad is constantly required to sacrifice economy in the interest of safety, dispatch or the commercial requirements of the service. All of these features make it difficult to obtain such economy and efficiency in service as might otherwise be expected. They do not make efficiency or economy impossible, but they do make both more difficult, and in any event, the efficiency of American railroads, has been a matter of amazement to the railroad managers and students of economies from every country in the world. It is possible that further economies will be effected in the cost of transportation. It is certain, however, that the demands of commerce, of labor, of the regulating bodies and of the people themselves, expressed in various ways, will continue to add to the cost of operation, and it is doubtful if all the further economies possible, will be sufficient to offset the increase to be expected from the causes just mentioned.

"I would like to say just a word before I close about the present attitude of the press towards the railroads. Four years ago, when the eastern carriers endeavored to advance freight rates, the press was generally opposed to the movement; to-day, however, it is practically unanimous in support of the railroads' position, and this change of attitude has been much commented upon and much misunderstood. It has been said, for instance, in the halls of Congress that all manner of schemes have been worked to create public sentiment favorable to the increase of railroad rates. That efforts have been made to create a sentiment favorable to the railroads in the present rate matter, I will not deny. I do assert, however, and as chairman of the president's committee I am in position to know, that such efforts have been confined to the very simple procedure of presenting the facts.

"The railroads have been criticized in the past, and perhaps rightly so, for not taking the public into their confidence. In the present case we have tried, I have tried, others have tried, to do the thing that we have been criticized for not doing in former years. We have stated our case to the public, and we have done so because we have felt that it was a matter in which the public was largely interested and concerning which it ought to be informed; and, while it is not to be presumed that the Interstate Commerce Commission will be or should be influenced by public opinion, still the Commission, because it also is the servant of the public, has the right to know the

> public's view concerning a matter of such prime importance. If the press in a large sense truly represents public opinion—and I sincerely believe it does—then the carriers may well feel gratified by the attitude of the public in the present case."

The address of the Honorable John Barrett, director-general of the Pan-American Union, delivered, as it was, in a highly optimistic vein, caught the fancy of his auditors, as, in the guise of prophet, the genial director-general visualized a wonderful and prosperous future for the railroads when the Panama Canal, opening the vast countries and resources to our south, shall stimulate traffic between these continents and between the United States and other foreign nations in a manner never before anticipated.

He warned the railroads and shippers of the country to be ready to take advantage of the great opportunities which would be afforded by the opening of this waterway, and said in part:

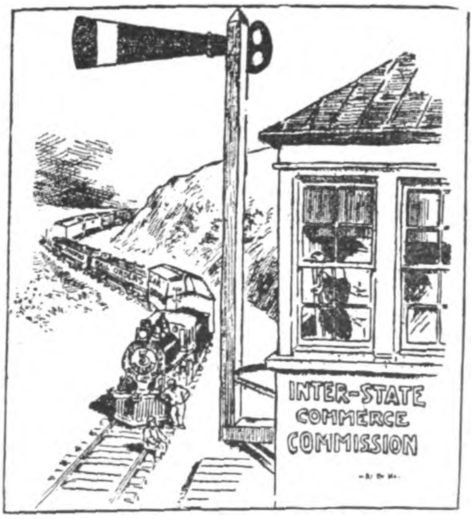
> The Panama Canal will have a great influence upon the railroads of the United States. That this influence will be favorable I am convinced. It is no exaggeration, in my opinion, to state that the traffic which should develop through the Panama Canal will prove a boon to the railroads of the Atlantic and Pacific Coasts, and central sections of the United States.
>
> At first the transcontinental systems or their sections between the Mississippi Valley and the Pacific Coast may suffer from the competition of the canal, especially in the bulky class of freight, but in the course of a few years what they will lose in this respect will be more than counterbalanced by their growth of business in the increased prosperity of both the Pacific Coast and the Western portion of the Central West. In other words, in the course of five years the increased development of local business which will come indirectly from the opening of the canal will far more than make up for the loss of the heavy through business.
>
> The possibilities of the Panama Canal and of Pan-American commerce are to-day the greatest foreign problems and opportunities which confront railroad and business interests of the United States. Getting ready for the Panama Canal and going after Pan-American and Pacific trade should be the special study of this hour of every railroad system and of every manufacturing company which in anyway is concerned with export business. The railroads in every part of the land should join with commercial organizations and civic societies in not only studying the meaning and possibilities of the canal, and of the commerce which it will develop, but in actively and actually preparing to use the canal to send exports out, bring imports back, and, above all things, to meet the competition of such countries as England, Germany and France and Europe and Japan and Asia.
>
> I can tell you that there is not a great port or exporting or importing center of Europe, of Japan, of Australia, and of Northern and Western South America, that is not to-day doing more to get ready for the Panama Canal than our corresponding ports and centers of the United States, with the possible exception of New Orleans and San Francisco.

DEVELOPMENTS AT WASHINGTON

The Interstate Commerce Commission, on April first, gave out a definite statement to the effect that they would push the advance rate case to conclusion as rapidly as possible. In other words, it was intimated that all other business would be put aside in order that the case might be disposed of with all possible promptness. This led to its formal closing on April 4, and a decision may now be expected as soon as the Commission has been able to digest the voluminous testimony which has been offered at the long series of hearings.

On April first, both President Willard, of the Baltimore and Ohio, and President Delano, of the Wabash, testified in support of the proposed advances. Mr. Willard asserted that the railroads were facing a crisis which might prove serious to the people of the entire country, as well as to the roads themselves. He and Mr. Delano both declared that the carriers were earning no returns upon heavy investments which they had made in their properties during the last four years.

Some interesting figures regarding recent railway earnings were presented by



WAITING FOR THE SIGNAL.
—*Philadelphia Record.*

Vice-President Brownell of the Erie Railroad. He pointed to the fact that the statement of the revenues and expenses of the carriers for the seven months ending March 31, 1914, showed a decrease in operating revenues amounting to $6,995,529 and a decrease in operating income of over $51,000,000, as compared with the seven months ending January 31, 1913. He also asserted that the return of the roads in Central Freight Association territory for the same period in group one, showed a decrease of $8,178,477 in freight revenues and a decrease in operating income of $25,195,598. This is exclusive of the roads in group two of Central Freight Association, which show a further decrease in operating income of over $4,000,000. Mr. Brownell further pointed out that the returns of revenues and expenses for February and March so far as they are available, are in the same direction and clearly indicate that the condition confronting the carriers at the present time is one of gravity and that it is of vital importance, in the interests of the public as well as the roads, that the question of the propriety of the advance in freight rates, should be decided at the earliest possible day.

Another development of importance during the same week was the suspension, by the Commission, of all new tariffs recently filed by railroads eliminating allowances to industrial railroads, with the exception of those affecting the United States Steel Corporation and other iron and steel companies in the East, which were permitted to stand. Approximately 4,000 tariffs were suspended and the action came as a complete surprise to many, in view of the fact that these tariffs were submitted in compliance with the Commission's findings in the industrial railways case, in which it was held that allowances and division of rates made by trunk lines with certain industrial railways operated by iron and steel companies in Eastern territory were, in effect, rebates and should be discontinued. The order for suspension, which expires July 30th, provides for hearings, but no date has as yet been fixed. Furthermore, it is very probable that these tariffs will be again suspended as, judging from past developments, no case of such magnitude has been disposed of by the Commission in so short a time.

While these suspensions are undoubtedly largely due to the protest from shippers backed by an injunction issued by the Illinois Railroad Commission, it nevertheless remains true that the new tariffs follow the very vigorous argument of Mr. Brandeis, the Commission's attorney, to the effect that the Eastern roads were losing many millions of dollars annually by reason of the allowances made to connecting industrial lines. In filing the tariffs, therefore, the railroads have endeavored to meet the wishes of the Commission which now finds itself in the predicament of having to deal with the protesting shippers who are now largely sustaining the railroads in their former policy.

Never before has the Commission been so squarely on trial before the public bar, than it is at the present time, and its practical value is being put to a most searching test. On the ability of the Commission to decide the advance rate case promptly and justly, depends the faith of the people as never before in quasi-judicial bodies of this kind. A commission that fails to act with necessary promptness, in an acute situation of this character, is of little use to the country, for its work, unless promptly conducted, might as well be done by Congress and the courts.

THE RAILROADS DENIED FAIR PAY FOR CARRYING THE MAILS

Attention was called in last month's issue to the fact that Congress had again failed to do justice to the railways by passing the bill providing for the expenditures of the Postoffice Department for the next fiscal year without making any provision to compensate the railroads for carrying the parcel post.

The situation as it exists to-day could scarcely be worse, and the country is presented with a spectacle of a Government, which on one hand demands absolute integrity of action on the part of the carriers, while on the other hand, it subjects them to a treatment so unfair as to be designated as nothing short of dishonest.

The railroad companies claim that the data compiled by the Postoffice Department itself shows the carriers to be underpaid by $29,000,000 annually for carrying the mails. By their own calculations, they claim to have been underpaid, even before the parcel post was instituted, by at least $15,000,000 per annum. This unjust treatment has existed for many years and it appears practically impossible for the railroads to procure any adequate relief or to get the Government to pay them fairly for the services which they are forced to perform.

A few figures will strikingly uphold this statement. For example, the postal revenues in 1907 were approximately $183,500,000; in 1912 they were somewhat over $246,500,000, an increase in five years of about $63,000,000. As against this, railway mail pay for 1907 was $51,000,000, and, in 1912, slightly over $50,500,000. In other words, the chief factor which enabled the Postoffice Department to earn this increased revenue of $63,000,000, not only did not receive any extra compensation for the additional work performed, but actually suffered a reduction of some $304,000. This, it should be remembered, was before the installation of the parcel post service on January 1, 1913.

The bill referred to, which Congress has recently passed, providing for the expenditures of the Postoffice Department for the next fiscal year, is based upon official estimates of the Postoffice Department that during the next fiscal year the parcel post will probably handle about 600,000,000 packages, yielding a revenue to the Postoffice Department of about $60,000,000. This should mean, in all fairness to the railroads, an increase in the payments made to them for carrying the mails, of at least $12,000,000, for parcel post alone. Nevertheless, the appropriation bill recently passed provides for no increase whatsoever, beyond the trivial and utterly inadequate provision already made. The railroads are given to understand that the whole question is under consideration, and one of these interminable investigations, which appears to be part and parcel of governmental activities, was started as far back as 1909, and has been spasmodically carried on ever since, with the end, as yet, apparently nowhere in sight.

In the meantime, the officials of the Postoffice Department have endeavored to sustain the position taken by the former Post-Master General and by the present incumbent of that position, and have introduced new issues, such as the allegation that the railroads perform a governmental function in carrying the mails and should therefore earn less than a commercial rate. Nevertheless, by the Department's own figures, thus far produced, and by the use of more correct percentages, the underpayment of the railroads by about $29,000,000 per annum, is clearly established.

In view of these figures, and of the fact that calculations have been made on different bases, showing loss to the railroads on this business ranging from $13,000,000 to $37,000,000 per annum, the carriers feel entirely warranted in making the moderate claim that in 1909, the underpay was not less than $15,000,000. Since that time, however, there has not only been a great growth in the mail tonnage, but an entirely new business, the parcel post, has been established and no adequate provision made for reimbursing the carriers for caring for this enormous increase. It should therefore be plainly apparent, even to the layman, that a prompt and satisfactory adjustment of this important question is demanded by every consideration of justice and right.

The Railroad Committee on Railway Mail Pay, in a recently issued bulletin in which it discusses this problem from every angle, calls attention to the fact that it has not failed to give the most thorough consideration to the proposal that space rather than weight, be made the measure of the service rendered, but it is absolutely convinced, by its consideration of the subject, that any such plan would be dangerous to the Government and unsatisfactory to the carriers, principally because of the large amount of discretion, the adjustment would leave to the officers of the Department. As the committee points out: "This conclusion is not inconsistent with the deepest faith of the honesty of the departmental officers, but recognizes the disadvantages of their position under our political form of Government and the opportunities which would present themselves for serious irregularities."

There would at least be frequent occasions for misunderstanding and irritation and these would lead inevitably towards a lack of co-operation, which it is pointed out, should always exist between two National industrial establishments, such as the railroads on the one hand and the postal service on the other. It is little short of deplorable that this whole problem should become befogged by the injection of the consideration of another method under which railway mail pay might be regulated, when the weight basis is so universally admitted to be the only fair one upon which such compensation should be computed.

THE QUESTION OF WAGE INCREASES

One of the arguments advanced by the Eastern carriers, in their efforts to have their freight rates increased, is based on the fact that the wages of railway employes have, in the aggregate, been increased enormously during the past two or three years.

In making these claims, various roads have, from time to time, shown the effect of such increases upon their company's expenditures, but it was not until the recent statement filed by the Eastern roads with the Interstate Commerce Commission, that it became possible to state just what, in the aggregate, these increases amounted to. It appears that the various railroad companies in Eastern territory paid out in wages during the year ending June 30, 1913, $506,000,000. Estimates for twenty-nine of the thirty-eight railroad systems concerned, show an increase in wages for 1913 over 1910 of $48,618,972, due to changes in rates of pay and working conditions.

These figures alone would justify the railroads in requesting that they be permitted promptly to increase their rates and it is perfectly obvious that any other business would make an effort to meet a similar condition by an increase in the selling price of their merchandise. This, however, is only a small part of the problem which confronts the carriers, so far as increased expenditures are concerned. Legislation and regulation have, within the past few years, added enormously to the carriers' financial burdens. Every piece of equipment, whether it is represented in the right-of-way or the rolling stock, must be purchased at a higher rate. Taxes have advanced, and, in fact, practically every item entering into railway operations, represents a larger expenditure than it did a few years ago.

Why the Commission, in view of these facts, permits month after month to roll by without granting the necessary relief, is something very difficult for the laymen to understand. Admitting the necessity for the Commission to have a thorough and comprehensive knowledge of the situation before taking any definite action, the main facts in the controversy have been so well established and have remained practically unrefuted, that the reason for further delay is not apparent. We venture to assert that there is scarcely a shipper who has appeared before the Commission to argue against the rate increases, who does not, in a general way, recognize the justice of the carriers' contentions and desire to see their income increased to such an extent as will enable them to properly conduct their plants. Their opposition relates largely to specific rates or territories, and has no real bearing on the present case.

There may, of course, be certain individual readjustments made necessary, should the Commission grant the horizontal increase of five per cent, but these must, of their own nature, be considered on their individual merits, and should not be permitted to delay the settlement of the main issue. If the press of the country is any criterion, the public is becoming extremely weary of the dilatory tactics so largely in evidence at Washington, and in the meantime, business is largely on the verge of hysteria not knowing which way the cat may jump.

BUSINESS MEN DEFENDING THE EXPRESS COMPANIES

The recent action of Merchants' Association of New York, in coming out in defense of the express companies, is beginning to bear fruit. This attitude, as recorded in last month's issue, is to the effect that there are certain services performed by express companies which would be impossible to attempt by the parcel post and to wantonly destroy such service would constitute an inexcusable blunder on the part of the Government to say nothing of the injury which would be done to the general public, to the express companies and to the investors in express companies' securities.

Other organizations are now voicing their opposition to a further extension of the parcel post at the present time, and by resolutions are clearly indicating their disapproval of further governmental action tending to cripple or destroy the express service. The Chicago Association of Commerce, the most powerful organization in the Middle West, following the action of the Merchants' Association of New York, and upon recommendation of its Freight Committee, has adopted a resolution which urges the Postmaster General, for a reasonable period, to make no radical change in the parcel post regulations, to the end that commerce may have an opportunity to shape itself to present conditions and secure the benefit of a relative adjustment in the forwarding of small packages by freight, by parcel post and by express.

The Board of Trade of Peekskill, New York, has indorsed and approved by a unanimous vote, the position taken by the Merchants' Association of New York, while the Board of Directors of the Albany Chamber of Commerce, have passed a resolution to the effect that in their opinion no social or economic benefit will result from substituting the parcel post for the express service beyond the limit now established, but that on the contrary, serious harm to the country's traffic would ensue with a probable loss resulting from the parcel post operation to be borne by the public treasury.

Other organizations have taken, or are about to take, similar action. The Business Association of Evansville, Ind., through its secretary, writes that their organization agrees with the New York Chamber of Commerce that the express service should be preserved, as it is essential to the expeditious handling of goods. The secretary of the Bainbridge, Ga., Board of Trade, while criticising the express companies for some of their past acts, expresses the opinion that sober thought must show that the express service is a field which cannot be filled by the parcel post, and that this is a matter which concerns everyone. The Tile Manufacturers 'Association with headquarters at Beaver Falls, Pa., has taken action opposing the proposed increase in the weight of parcel post shipments and has protested both to the Postmaster General and to the members of Congress, who represent the district.

In addition to these protests by trade bodies, the press of the country, through editorial expression, is supporting the position taken by these organizations, and many of them are caustically criticising the Government for its apparent indifference towards the welfare of business enterprises.

As a matter of fact, the attitude of the Postoffice Department with regard to the promotion of the parcel post, has been little short of brutal, not only showing an utter disregard for the rights of others, but in making congratulatory statements concerning the earnings of the Department, when it is considered that such earnings, to a large extent, are based upon a clean steal from the transportation interests, it places itself in such a contemptible position as to forfeit the respect of all right thinking people.

In the meantime, the directors of the United States Express Company voted definitely on March 14th, to wind up its affairs and go out of business. This means throwing 15,000 employes of this company out of work. The yearly pay roll is about $6,000,000. The following is the resolution of the directors which means the dissolution of the company:

> "Resolved, That pursuant to the power and authority conferred upon the Board of Directors by its articles of association, the Board unanimously declares that it is for the best interests of the company that the company be dissolved as soon as may be without awaiting the expiration of its term of existence; and that its business and affairs be settled up and finally adjusted as promptly as may be done. The President is directed to inform the shareholders of the company of said action of the Board."

. In commenting on the action taken by the Board of Directors, President Roberts has had the following to say:

> "We could have stood the competition of the parcel post as originally planned, but we cannot stand it as at present constituted, when it is carrying parcels of almost unlimited weight. We would have continued in business if the makers of the parcels post had not threatened to extend it to consume the express business, increasing the weight of parcels carried and reducing the rates.
>
> "When the parcels post started, we recognized that it filled a long felt want that the express companies could never meet. It would always be impossible for us to make rural deliveries. This the parcels post could do.
>
> "Our action, however, is not based on the competition of the parcels post, but chiefly because of the new heavy reduction in rates that went into effect on February 1st, on top of the parcels post competition.
>
> "And it is not only from the new rates ordered by the Interstate Commerce Commission that we suffered. It was from the hounding by State Rate Commissions.
>
> "Why, only yesterday, the Railroad Commission of Louisiana, issued a peremptory order that we lower some of the intrastate rates.
>
> "We could have lived and prospered under the original parcels post, but under these new conditions it is impossible. And the railroads are just as seriously affected by the reduction of rates as the express companies."

President Roberts told of the valiant struggle the company had made in the last year to economize and cut down so that it could continue to live. Mr. Roberts entered the company from the Delaware and Hudson Railroad on January 1, 1913. He brought from Washington as his assistant W. D. McLean, an experienced corporation lawyer and efficiency expert, who brought G. G. Thompson, chief clerk of the Postoffice Department at Washington, into the company to help carry out the plan of efficiency. Buying was centralized, methods of handling express accounting were improved, equipment was thoroughly overhauled and put in better shape than for many years.

"As the result of economies," said President Roberts, "we turned a loss of $121,000 in January, 1913, into a profit of $5,600 in January of this year. But we cannot continue to reduce expenses forever. When you come to cutting off 16 per cent more of our revenues as happened when the Commission ordered the reduced rates February 1, it meant that conditions were threatening. We would have had to increase our gross business 25 per cent to break even."

Surely, the time to call a halt has come. When the Postoffice Department has succeeded in making some arrangement whereby the railways may be adequately compensated for the vast additional service which they have recently been called upon to perform, then the consideration at least, of a further extension of the parcel post, might be proper. Any other action under existing conditions would be indecent and certainly would not be justified by any consideration of fair play or common honesty.

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REDUCTIONS IN WORKING FORCE

A peculiar twist in the public mind, is represented in the severe criticisms aimed at the railroads for reducing their working forces in an effort to curtail expenses. In other business this would be considered a necessary and legitimate act and certainly no sympathy would be wasted on the man foolhardy enough to jeopardize his whole business as well as those affected by its success, by retaining the services of certain employes for whom, under a restricted output, there was no longer justified employment.

While the trend of recent events is hopeful in the direction of a fairer consideration of the obligations society owes to the working man, it is nevertheless true that charity and business, under existing conditions, cannot be combined without jeopardizing the success of the latter. This would not imply that such developments as pensions, shorter working hours, improved sanitary conditions and a better appreciation of the workingman's value, are not rightfully part of present-day business methods. They should be, and are in fact, beginning to constitute no unimportant part of the real success of business enterprises. Such considerations, however, are entirely foreign to the employment of men, when conditions render their services no longer necessary. While railway officials personally desire to assist employes, who through stress of circumstances are dropped from the service, it should not be overlooked that in the conduct of affairs they have other responsibilities more imperative and which, in accepting their positions, they have agreed to discharge to the best of their ability.

During the present winter months, the railroads have reported decreases in their earnings due to a lesser volume being offered for shipments. This is the effect, chiefly, of many of the larger industries operating on reduced output schedules. While this decreased production has been reflected in the gross receipts of the railroads, by far the most discouraging factor has been in the steady rise in the cost of operation, which has depleted the net earnings account to a serious degree. Therefore, the railroads in adjusting their transportation machines to this new situation have been compelled to reduce their forces to such an extent as will enable the handling of the business without inconvenience to shippers, but with greatest efficiency from the standpoint of transportation. This has been the situation forced upon the carriers for which they should in no wise be held responsible.

It is quite true, as currently reported, that the reduction of forces has often extended to all branches of the service. However, with less traffic to be handled it should be readily appreciated that fewer train and terminal employes are required and this has made imperative the necessity for laying off, at least temporarily, large numbers of such employes. Furthermore, with less trains in operation, the work in the shops was cut down and employes were dropped in the maintenance of way department and other branches of the operating departments. In all these reductions, however, the strictest consideration has been given to the element of safe operation, but it can readily be seen that with less business, the ratio of safety can be maintained with fewer employes.

The assertion made in some quarters, that these reductions have been made for political effect, is not worthy of consideration. The railroads are confronted with the hard facts of smaller earnings and relatively larger expenses, and are attempting to meet the situation in a manner they believe is best suited to protect the properties entrusted to their care. If legislators, who are prone to thrust expensive legislation upon the carriers, with little regard either to its necessity or utility, would rise above political influence, and deal with these matters in a spirit of fairness and independence, the railroads would not be compelled to resort to such drastic measures; and if the body of National regulators now considering the question of permitting the railways to slightly increase their freight rates, would find it possible to grant the relief asked for more promptly, this too would undoubtedly assist railway officials to alleviate conditions which they regret even more than does the public, but for which they are assuredly not responsible.

Regarding the recent action taken by the Pennsylvania Railroad in extensively reducing its operating force, the following statement authorized by President Samuel Rea on March 30th is of interest:

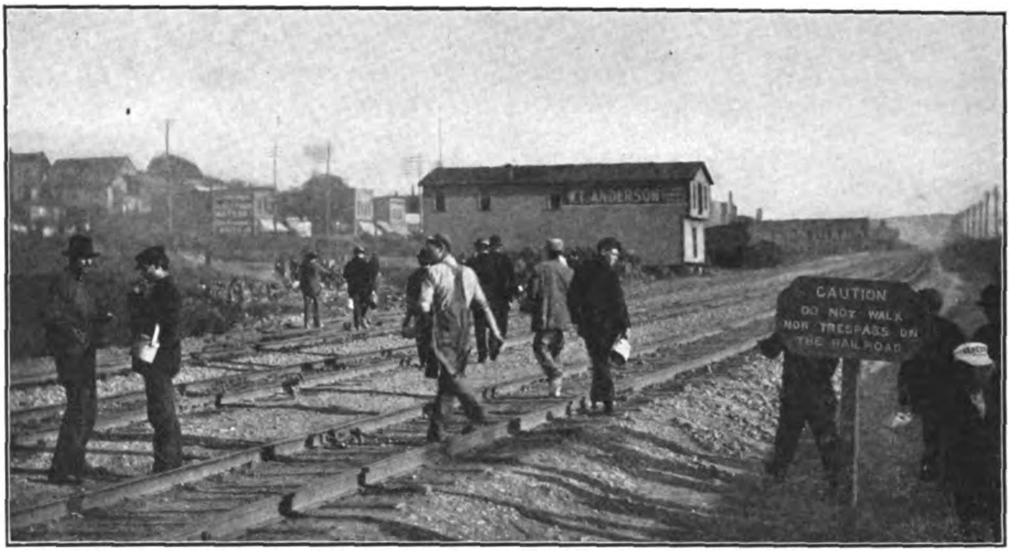
> The decision to reduce train service and working forces of the Pennsylvania System, while apparently sudden, should not be considered surprising, as the published monthly statements of the System furnished to both State and Interstate Commerce Commissions, have shown the large decreases in net operating income the System has sustained. Higher wages, extra crew and other laws, higher taxes, and other expense items caused these decreases, which are not peculiar to the Pennsylvania Railroad. These causes still exist and in addition the gross revenues of the System have been steadily decreasing since last October.
>
> While many other railroad systems began to reduce forces in the middle of 1913, the Pennsylvania System continued its usual train service and working force as long as possible.
>
> In view of the fact, however, that in the four months ending February 28th, 1914, compared with the same period of the previous year, operating revenues decreased $8,815,991.17 and net operating income decreased $6,652,671.29, the Company is compelled to reduce operating expenses.
>
> The management of the Company would not adopt any policy that would unnecessarily inconvenience the public, allow the property to depreciate or deprive men of employment unless required by existing conditions. But the falling off in earnings and traffic demands lower operating expenses, and the only way to bring this about is to reduce train service and the number of employes.

It is an easy matter to say that the railroads should do this and that the railroads should do that, but it is about time that railway affairs receive prompt and fair consideration on the part of regulative authorities, or else business is likely to receive a shock which will cause it to begin a vigorous housecleaning, so far as the body politic is concerned. In the meantime, thousands of perfectly innocent people may be made to suffer, but this unfortunately often appears to be the price of progress.

THE TRESPASSING EVIL

It would be impossible to over-estimate the deplorable results which come from the illegitimate use of railway right-of-way by pedestrians. For a number of years many of the prominent roads have been making strong efforts to arouse public sentiment against this dangerous habit. Many States have laws fully able to cope with the situation, but conditions are such that it appears almost impossible to procure convictions of a character which would prove of sufficient warning to check the practice. There has, of course, been some improvement within the last few years, but with the press clamoring against railway accidents and with public officials often severely arraigning the carriers for such accidents, there appears something radically wrong in a governmental system which permits trespassing, with its resultant loss in life, to go on year after year, practically unabated.

Take, for example, a recent statement issued by the Pennsylvania Railroad. It appears that on this system, east of Pittsburgh, 2,697 trespassers were killed in the years from 1907 to 1913 inclusive, despite the fact that the road was doing everything in its power to keep from its tracks those persons who were not in its employ. This death roll means that the country lost economically, the services of many trained and useful men for, of those killed, 1,318 were useful members of some community, often having dependent families. Among this number, aside from twenty-four boys, twenty-three girls and one hundred and twenty women, there were three hundred and ten laborers, two hundred and twelve miners, twenty-five employes of other railroads, twenty-five farmers, sixteen blacksmiths, seventeen carpenters, seventeen glass workers, seven engineers, seven iron workers, eleven machinists, thirteen masons, twelve steel workers, six students, nine painters and representatives of almost every known trade and profession. Truly an awful record and surely enough to make those

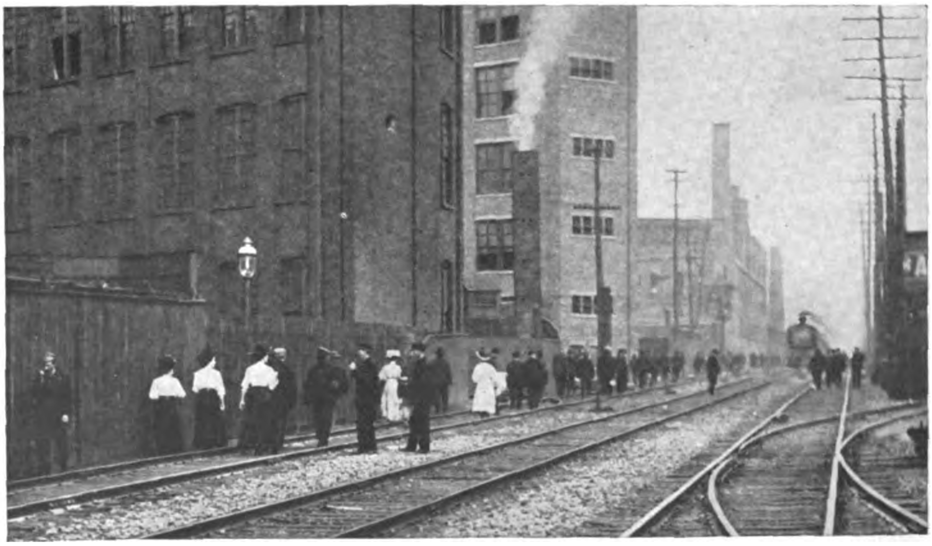


How Trespassers Disregard Warnings.

These workmen have just left the factory and are on their way home. This short cut to home frequently proves a short cut to possible injury and death.

who occupy seats of responsibility, sit up and take notice. It might well be asked of these self-same government officials who is responsible for the deaths of more than 85,000 railway trespassers in the past twenty years. Certainly not the carriers, who have been, and are doing, all that lies within their power to check the practice.

It is admitted that this kind of regulation is not of the popular brand, as the public is loath to give up what it considers a convenience in the employment of railway tracks for sidewalks, but in view of the record, is it not about time for public officials who are immediately responsible for these conditions, to take measures by which they can be effectually suppressed? The accompanying illustrations scarcely require comment. It is just such practices that swell the death roll referred to.



Trespassers Courting Death.

Factory employes making a foot path out of the railroad. This picture was taken at 5.05 P. M., in Cleveland, Ohio, on the tracks of the Pennsylvania Lines. A passenger train was approaching from the south while these people were trespassing.

AGREEMENT REACHED IN NEW HAVEN SYSTEM'S DISSOLUTION

The efforts of Chairman Elliott and his Board of Directors, to find a common basis upon which the New Haven System and the Government authorities at Washington could work out a practical plan of dissolution, have been crowned with success. During the past few months, the proposed plans have been the subject of a series of conferences between the railroad officials of the company and the Department of Justice, the results of which have been embodied in an agreement consummated between the two parties on March 26th. In referring to the agreement reached, Chairman Elliott has made the following public statement:

"In the judgment of the directors the general business and financial condition in New England, and particularly those affecting the transportation lines, were such that it seemed wiser to make a settlement, 'if possible, rather than face a general dissolution suit, with all of its ramifications and uncertainties. The directors feel that the time allowed, with the right in the court to extend it upon application of the company, or of the liquidators, give an opportunity for disposing of the various properties to the best advantage possible and with the least disturbance to general business conditions. A meeting will be called in the very near future for that purpose. Prior to that meeting a statement will be submitted to each stockholder outlining the situation."

Directors of the New York, New Haven and Hartford at a meeting in New York City, March 25, unanimously approved of the agreement reached between Chairman Howard Elliott and Attorney General McReynolds, under which the New Haven System is to disintegrate. Chairman Elliott was authorized to call a special meeting of the stockholders in New Haven, April 21st, when formal action on the agreement will be taken.

Officials of the road believe that the compact, terms and conditions of which follow, will be ratified by a large majority vote.

"The attorney general has indicated to the representatives of the New York, New Haven & Hartford Railroad the arrangements which he thinks would result in bringing the affairs of that company into harmony with the law. The representatives of the railroad are willing tc accept the requirements indicated and to endeavor to put them into effect without delay if approved by the stockholders in a meeting to be called at once. The indicated arrangement stated in general terms follow:

"1. The Boston Railroad Holding Company is a Massachusetts corporation, holding a majority of the stock of the Boston & Maine Railroad and ninety per cent of the former stock, in turn, is owned by the New Haven Railroad. The character of the holding company prohibits it from disposing of the Boston & Maine stock. The legislature of Massachusetts will be asked to remove this prohibition, and, if this is done, the stock of the holding company will be transferred at once to five trustees, and, after arrangements have been made to protect the minority stockholders of the company, they shall sell the Boston & Maine stock prior to January 1, 1917.

"2. The stocks of the companies which control the Connecticut and Rhole Island trolleys will be placed in the hands of trustees—five from each State—and shall be sold within five years from July 1, 1914.

"3. The majority stock of the Merchants' & Miners' Transportation Company, now held by the New Haven Railroad, will be placed in the hands of three trustees and shall be sold within three years from July 1, 1914.

"4. The minority stock in the Eastern Steamship Corporation held by the New Haven Railroad shall be sold within three years from July 1, 1914, and in the meantime shall be deprived of voting power.

"5. Whether the New Haven Railroad shall be permitted to retain the Sound lines will be submitted to the Interstate Commerce Commission for determination under the provisions of the Panama Canal Act.

"6. That Berkshire trolleys shall be sold within five years from July 1, 1914.

"7. A decree embodying the foregoing shall be entered in the United States District Court for the Southern District of New York. The decree shall further provide that upon application of the New Haven Railroad for the trustees and for good cause shown, the time within which any of the above-mentioned stock shall be sold may be extended by the court.

"Trustees satisfactory to all parties have been suggested. Those proposed in connection with the Boston & Maine stock have signified their willingness to serve and their names are: Marcus P. Knowlton and James L. Doherty, of Springfield, Mass.; James L. Richards and Chas. P. Hall, of Boston, and Frank P. Carpenter, of Manchester, N. H. Names of the others will not be made public until acceptance by them is fully assured.

"The essential reason for placing the property in the hands of trustees is to secure their immediate independent managements. The outlines of the proposed decree and trust agreements have been discussed and are understood. Their verbiage remains to be worked out, but no difficulty is anticipated in that respect. This statement has the approval of both the attorney general and the representatives of the railroad."

In connection with New Haven developments, it is of interest to note that the Boston and Maine stockholders have approved the proposed sale of 159,601 shares of Maine Central at 95 on the terms of which the Boston and Maine is to receive $3,000,000 cash by May first, and the balance in five-year five per cent notes of Main Railway Company, which will provide cash by selling its stock, of that amount, to Maine

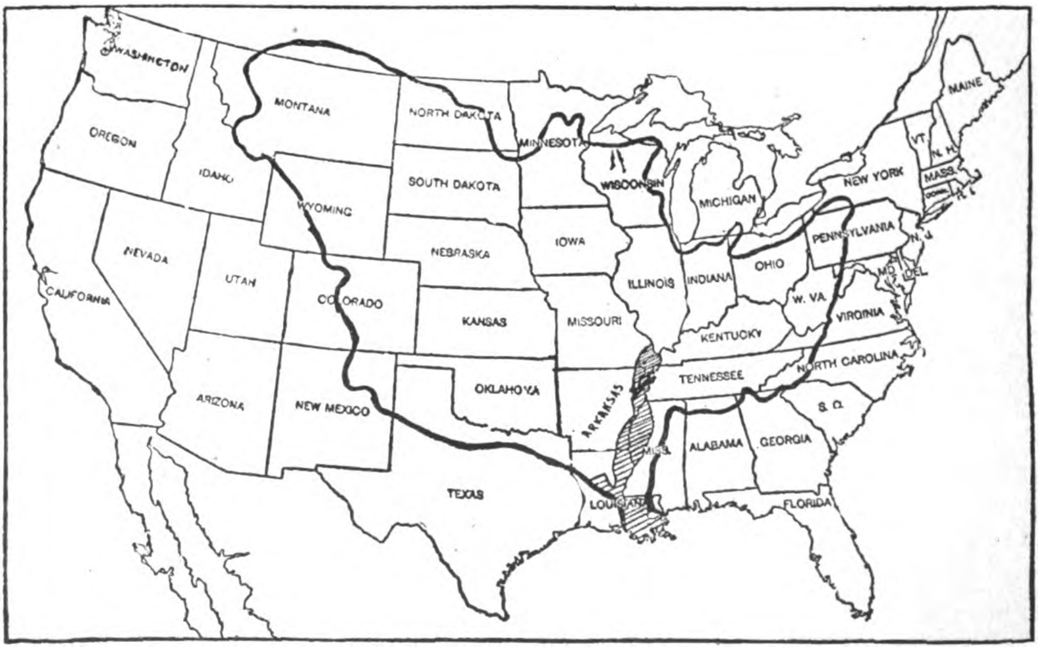
Central in exchange for the latter's thirty-day notes to be turned over to the Boston and Maine. The proposed trust agreement for holding of Maine Central majority stock provides that Messrs. Morris McDonald, Charles O. Bancroft and Harry M. Verrill, all of Portland, shall be trustees.

THE FLOOD RAVAGES OF THE MISSISSIPPI VALLEY

The people of the Mississippi Valley are contending more vigorously than ever before that Congress develop some effective means whereby the great losses which occur through the overflowing of its banks, by the Father of Waters, shall be stopped. Losses aggregating as high as $100,000,000 have been caused by these floods and as yet no adequate plans have been developed to check them. Organizations of business men from Pittsburgh to New Orleans, want the lands adjacent to this river and its tributaries protected, and it is the consensus of opinion that a big investment by the United States Government, even to the extent of $60,000,000 a year for ten years, would be justified, not only in the protection it would assure to the lands which are already under cultivation, but also on account of the possibilities of the reclamation of hundreds of thousands of other acres.

The waters from this vast system of rivers, as it converges and flows into the Gulf of Mexico, comes from and is distributed through thirty States and it has become apparent that the combined influence of these States is necessary to procure a liberal and definite action by Congress, which will fully meet the situation. The loss which occurs from year to year is enormous, and recent experiences indicate that the floods are increasing rather than decreasing from year to year. As to figures, it is stated that the direct losses by flood at Pittsburgh have amounted to more than $12,000,000 in the last ten years, while the flood losses along the Ohio Valley in one year have been calculated by the Inland Waterway Commission at over $100,000,000. The Pittsburgh Flood Commission after a comprehensive study of the situation by competent engineers, has come to the conclusion that for $20,000,000 Pittsburgh could build reservoirs and store up the source streams of the Ohio to be released in the dry seasons to the advantage of the navigation interests. This would not only prevent floods but would add to the transportation possibilities in this district.

The Domain of the Father of Waters


WASHINGTON
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UTAH
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COLORADO
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NORTH DAKOTA
SOUTH DAKOTA
NEBRASKA
KANSAS
OKLAHOMA
TEXAS
MINNESOTA
IOWA
MISSOURI
ARKANSAS
LOUISIANA
WISCONSIN
ILLINOIS
MISS.
MICHIGAN
INDIANA
OHIO
KENTUCKY
TENNESSEE
ALABAMA
GEORGIA
FLORIDA
S. C.
NORTH CAROLINA
VIRGINIA
W. VA.
PENNSYLVANIA
NEW YORK
MD
DEL
N. J.
VT.
N. H.
MASS.
CONN.
MAINE

The Drainage Area of the Mississippi and its tributaries is included within the heavy black line and covers nearly half the country. The deeply shaded area in the southern part of the Mississippi Valley is that subject to overflow in time of flood.

The plan taken up at the recent National Flood Prevention and River Regulation Conference in New Orleans affects the entire territory drained by the Mississippi and its tributaries.

"It may be a source of surprise to a great many of our people," said John M. Parker, who presided at the conference, "to know that the damage by floods in the Mississippi Valley has amounted to more, since the beginning of the building of levees, than the cost of all the wars engaged in and of all the pensions ever paid by the United States Government."

In the consideration of this problem it should not be overlooked that the disastrous floods of the last ten or twelve years have not been confined to the Gulf States for as in 1902, the chief damage was in Illinois, Missouri, Kentucky, Arkansas, Tennessee, Louisiana and Mississippi, while in 1912, the States most severely effected were West Virginia, Ohio and Indiana. It should also not be overlooked that while this enormous accumulation of water under present conditions constitutes a grave menace, it would, if properly controlled and conserved, prove of the greatest value not only in the regulation of its flow for navigation but for irrigating either arid lands or lands subject to drought, such, for example, as Kansas and other Middle Western States suffered from last summer and which resulted in extensive crop damage.

For the above reasons, the progress of the Newlands bill will be watched with interest as it represents the most comprehensive and progressive step yet taken to properly control the waters of the Mississippi and its tributaries.

The money appropriated by the Newlands bill is to be known as the River Regulation Fund, and is to be used to secure:

Promotion of interstate commerce by the development and improvement of the rivers and waterways of the United States and their connections with the Great Lakes and with each other by the following means:

The co-ordination of and co-operation between railroad and water routes and transportation and the establishment and maintenance of adequate terminal and transfer facilities and systems, and their maintenance, improvement, and protection.

The making of examinations and surveys and the construction of engineering and other works and projects for the regulation and control of the flow of rivers and their tributaries and source streams, and the standardization of such flow.

The maintenance of navigable stages of water at all seasons of the year in the waterways of the United States.

Preventing silt and sedimentary material from being carried into and deposited in waterways, channels, and harbors.

The conservation, development, and utilization of the water resources of the United States.

Flood prevention and protection, through the establishment, construction, and maintenance of natural and artificial reservoirs for water storage and control, and the protection of watersheds from denudation, erosion and surface waste, and from forest fires.

The maintenance and extension of woodland and other protective cover thereon.

The reclamation of swamp and overflow lands and arid lands.

The building of drainage and irrigation works in order that the flow of rivers shall be regulated and controlled, not only through the use of flood waters for irrigation on the upper tributaries, but also through controlling them in fixed and established channels in the lower valleys and plains.

Doing all things necessary to provide for any and all beneficial uses of water that will contribute to its conservation of storage in the ground or in surface reservoirs as an aid to the regulation or control of the flow of rivers.

Acquiring, holding, using, and transferring lands and other property that may be needed for the aforesaid purposes.

Doing such other things as may be specified or necessary to the accomplishment of the purposes of the bill.

Securing the co-operation of States, municipalities and other local agencies.

The bill creates a Waterways Commission, with the President of the United States as chairman, having veto power, and including the Secretaries of War, the Interior, Agriculture and Commerce, and the chairman of the Board of River Regulation, also created by the bill.

BOOK REVIEWS.

Railway Reorganization.— The eyes of the country are turned upon the railroads as never before. Railroad reorganization is no new phenomenon—it is old enough to have been very fully studied—but it has gained a new national significance. The fullest study of precedents of this sort is a volume called "Railroad Reorganization" by Stuart Daggett, Assistant Professor of Railway Economics in the University of California, published by the Harvard University Press as Vol. IV of the Harvard Economic Studies. It is an examination into the financial history of the largest six railroads which failed between 1893 and 1896, and a careful study of the Rock Island System which was reorganized in 1902. No less than forty-two reorganization plans are considered. The most important development in practice, the author finds, has been the increasing use of new securities bearing a fixed rate of interest with new securities bearing a conditional rate of interest; a use which may make the losses of security-holders merely temporary, and yet safeguard the interests of the corporation.

Contemporary Opinion

Starve the Railroads and We Starve Ourselves.

(Frank A. Munsey in "Munsey's Magazine" for April.)

FORCING railroad managements into a position where they have been compelled to squeeze paltry dividends out of half-fed, half-nourished properties that they might keep their roads out of bankruptcy, is a rotten policy.

Legitimate economies are fundamentally necessary to honest, able management, and whatever the government has accomplished in the way of cutting out waste and introducing first rate standards of economy is, of course, very much worth while. But to starve railroads into other economies, such, for instance, as skimping on roadbeds, skimping on bridges, skimping on rails, skimping on rolling stock, skimping on safety devices, and skimping all along the line, is quite another matter. They are costly savings to the people, dearly bought savings.

I hold no brief for the railroads; I am not speaking for myself, as I hold no railroad stocks, and don't wish to hold any under present conditions. Neither am I speaking for those who do hold railroad stocks. I am speaking for idle men, speaking in the interest of better business, speaking for a square deal for the railroads, for safe railroads, for sound railroads.

For the government to stand back of railway labor, morally sustaining it in its demands for shorter hours and better wages, as the government has done, at the same time denying railroads the right to increase their incomes sufficiently to meet the increased cost of operation, is of the nature of confiscation, and no honest citizen in this country believes in any such thing or would himself, with full realization of the facts, be a party to it.

Let us have peace. Let this bitterness against the railroads cease. There is nothing in all this warfare for you or for me. Give the railroads a chance to prosper and we prosper with them; starve them and we starve with them.

Government Ownership Ways.

THE New York Sun" prints the following letter from Roger W. Babson:

"How can the Government at Washington object to granting higher rates to our American railroads when it charges five cents a mile on its only road, the Panama Railroad?

"How can the Government at Washington have the face to ask American railroads to purchase steel cars until it buys at least one such car for its own road which it operates on this Isthmus?

"How can our Government at Washington complain about the service on American lines when it operates only four trains a day on its own line, which, moreover, has a monopoly of all business?

"How can our Government at Washington consistently object to monopoly when itself operates and insists upon the most exclusive railroad monopoly in America?

"Let our Government first show how it can operate its own road, where it has an absolute monopoly, on a two-cent fare or else furnish steel cars and a good service before dictating to others."

Chronic Delay in Rate-Making.

(Philadelphia "Bulletin.")

SOME weeks ago the Interstate Commerce Commission decided that free service on "tap-lines," or freight tracks constructed for the convenience of specific shippers, whether granted directly or in the form of an allowance or division of rate, constituted a virtual rebate and therefore was an improper discrimination against other shippers not so favored. The contention has been carried still farther and it has been urged that the railroads should make a charge for all "spotting," or shifting of cars to and from sidings.

But when the railroads of the Eastern group filed new tariffs following directly the line of the Commission's decision and assessing charges for service on all such industrial "tap-lines" without discrimination, the Commission—as a matter of "routine" according to the official announcement—suspended the new rates, except as applying to iron and steel companies, until July, with every prospect that a further suspension will be made until fall.

The failure of the Commission to approve action taken in line with its own decision is sufficient to provoke criticism. What is just and equitable as affecting the iron and steel industry should apply as well to other industries. But the striking suggestion is that a three months' suspension of the new tariffs is a matter of routine, the ordinary course which any important change in rates must take, and, while it is within the possibilities that the Commission may make a decision in a lesser time, actual experience has been that one suspension follows another and a readjustment of rates often is delayed for a year or until conditions which exist when the rates go into effect are entirely different from the situation when the tariff was designed.

The practice of the Commission has become one of chronic delay, and, although the blame should not be placed upon the members collectively or individually, it is none the less serious and fundamentally defective. Rate regulation for the entire railroad system of the country, together with the multitude of other responsibilities as to railroad operation resting upon the Commission, is an impossible task for any nine men. And unless there is a change in the national policy, and the duty of governmental supervision is simplified, rather than constantly increased and complicated, the whole scheme of governmental regulation must fall, by reason of its own weight.

The Key to Prosperity.

(From the Milwaukee "Sentinel.")

IT amounts to a truism to say that the adversity of the railroads is incompatible with the prosperity of the country.

The prosperity of the country and the prosperity of the railroads are interlocking propositions; and if the Government does not permit the railroads to earn enough revenue to meet their cost of living, including their heavy taxes and their high wage rate, the Government is simply putting a drag on the general business of the country—artificially promoting the general condition of slack times and unemployment.

Is our public fully aware of the fact that, while American railroads are compelled (justly, we hold) to pay by far the highest wage rate in the world, American freight rates are materially lower than freight rates in Europe?

Our Government has taken over the rate fixing power.

Unlike other lines of business, railroading is not permitted to fix the price of the commodity it has to sell—transportation.

The public is thus protected against excessive freight rates.

But what about the companies, their army of employes and thousands on thousands of small investors?

Have they no equity in this Government rate fixing arrangement?

Very emphatically they have.

The Interstate Commerce Commission is supposed to be a quasi-judicial body; a body constituted, not for railroad baiting purposes, but to hold the scales of justice even between the buyers and the sellers of railway transportation.

There will be no general business revival so long as these great and multifarious purchasers and employers of labor, the railroads, are held down to a rate that cramps them in every direction.

If there can be such a thing as "Democratic good times," they will dawn when the Government rate makers permit these great enterprises to meet their increased cost of living liberally, and not before.

There is every reason to believe that a decision favorable to the roads would mark the beginning of the end of the present comparative stagnation.

President Rea's Call to Action.

(From the "Chronicle" of March 14th.)

SELDOM does a President of the Pennsylvania Railroad address the shareholders assembled at an annual meeting. The forcible speech made by President Samuel Rea to the stockholders on Tuesday last, at the meeting in Philadelphia, was thus unusual, but it was induced by extraordinary circumstances. The Chairman of the Iowa State Railroad Commission had made an aspersion before the Interstate Commerce Commission upon the Pennsylvania management and its method of accounting. This spurred President Rea to make prompt and emphatic denial and to point out that a standing offer is before the Commission from the management to explain anything pertaining to the accounts and reports of the Pennsylvania Railroad whenever the Commission desires an explanation.

President Rea was goaded by other circumstances, also, to take a firm stand against further legislature encroachments on the rights of investors and to make a fight for a repeal of the obnoxious Full-Crew laws. He called attention to the fact that one-third of the ninety thousand shareholders of the Pennsylvania Railroad Company are citizens of the State of Pennsylvania. Simply because they are investors, they should not be deprived of rights granted to other citizens. It has become common for nearly all classes of citizens to petition for legislation which will be of particular benefit to the petitioners and to work to obtain the laws which they wish passed. President Rea exhorts all investors to exercise the same right, not only in their respective States but in Congress as well. He urges not only that they shall work to prevent the passage of obnoxious laws, but for the repeal of those which are burdensome and wasteful.

Apparently the time is ripe for a national movement among investors to organize for their own protection. They are entitled to just as much consideration as is any other class of citizens. They have long been complaining of oppression, but there has been no attempt at organization for the purpose of bringing about a remedy. Their watchful waiting has been construed to mean supine indifference. If there are 30,000 owners in Pennsylvania of the stock of one large system, how many more thousands there must be who are interested in all other stocks. The power of the investors, if united, would be overwhelming, and one which politicians could not afford to ignore. It is simply because there has been no organized effort to resist encroachment that the anti-railroad movement has reached such magnitude.

If the officers of other railroad companies will rally to the support of President Rea, and owners of stocks and bonds of all important corporations will join in an effort to guide legislation in the right channels, a great step will be taken to restore confidence. That constant agitation against the railroads has affected their credit adversely, is shown by the difficulty which railroads are now meeting in obtaining funds by the customary course of bond issues. Instead of making long-time loans at a moderate rate of interest, railroads are forced to borrow money for short terms at high rates and to give secured short-term notes. In addition, one important railroad was obliged to attach unusual conditions for the protection of the money-lenders which may operate to the disadvantage of the shareholders.

Calumny is a dangerous weapon. President Rea has done well to enter a vigorous protest. He should not be allowed to stand alone. There are millions of persons in this country in sympathy with him and who should rally to his support.

Immoral Action by the Government.

THE justifiable apprehensions of railway officers are based upon continued legislative action in violation of the fundamental rule that economic control and economic responsibility must be united. The progressive separation of these elements under laws taking from the owners of the properties more and more of the degree of control over rates and operating methods which ownership formerly implied, though these owners must still accept all losses resulting from insufficient rates, unwarranted increases in wages, or the employment of an excessive number of men, seems to be unwise from either the economic or the political point of view. The lack of public protest against the immoral actions of the Post Office Department, under which the railways have been forced for years to carry the mails at ruinously low rates, and, more recently, to take over the transportation of the parcel-post traffic, with compensation for only a beggarly fraction of its total, points to a disregard, when railways are concerned, of ordinary principles of fair dealing and common honesty that is not less than ominous.—L. F. Loree, president, Delaware & Hudson Co.

Political Attacks Upon Railroads Harmful to Country's Prosperity.

A. L. MOHLER, President of the Union Pacific Railroad, is of the opinion that the ill treatment of railroads at the hands of politicians is doing the Western section of the country a vast amount of harm. In a recent statement he says:

"The railroads have created the facilities which represent part of your prosperity, and are one of the developing influences in western civilization; their property, their men and their officers are entitled to the same fair treatment that you extend to other respectable citizens and businesses of the city, county and state.

"Why are there not more people in Nebraska, which is so sparsely settled? The platform has been occupied by our traducers for the last ten years, until they have succeeded in discouraging investment in enterprises of our character.

"The tremendous increase in taxes, with the regulations which are covered by numerous State and Federal laws, all of which carry expense, and the discrediting of the sincerity of men in our profession, has resulted in a lack of confidence in what should be, aside from Government bonds, one of the most acceptable investments in this country.

"So long as these conditions exist and we are continually attacked by irresponsible people—I mean men, usually, who have no investment to imperil except their personal position—it cannot result otherwise than to discourage development in the territory west of the Mississippi River. This territory could, under the right conditions, sustain 50,000 miles more of track at an investment of $2,000,000,000, adding to the value of the lands and the creation of taxes, and supporting many millions more people."

An Unsound Parallel.

("Wall Street Journal.")

WHEN the question of government ownership of railroads, in a country whose government is subject to the popular vote, crops up, we are invariably referred to the Panama Railroad as an instance of successful public ownership. If charging three cents per ton for freight carried by the privately owned railroads of the United States for one-fourth of that figure represents successful operation, there is nothing more to be said. Is that the kind of bill the shippers of this country and the consumers are willing to pay to secure the proffered boon?

But the administrative success in Panama was due to the exact reverse of popular government. It was, in fact, a military autocracy. Officers of the American Army, beyond the reach of bribes or politics, administered the road, unhampered by taxing boards, state regulating bodies, labor unions, or the Interstate Commerce Commission. If the carriage of freight under such favorable conditions was so costly on the fifty miles of switch at Panama, what would not politics do with the 250,000 miles of steam railroad here?

When the German State railroads, capitalized at twice the figure of the American roads, are quoted as an instance of successful State ownership, the same objection applies. Their administration is quasi-military and absolutely autocratic. There is nothing like popular control. All sorts of rebates and favors are conceded as matters of state policy, and the losses are made up by the general taxpayer, the consumer and the shipper small enough to be ignored.

No less than 216 local bodies in this country have tried municipal ownership of electric railways and relinquished it. Texas has a State railway on its hands, which it would like to give away to a private corporation on any terms that would save its face. The plain fact is that only privately owned roads, run with the most rigid economy and the highest efficiency possible by a corporation, can in any measure meet the ever increasing public demands and live.

It is said that the $35,000,000 government railroad in Alaska is to be an object lesson in successful government ownership. Even if it is run without rebates, passes or political favoritism, at the present freight and passenger rates permitted by the Interstate Commerce Commission, it will provide a bottomless quagmire for the taxpayer's money, worthy to rank with the rivers and harbors pork barrel.

The Outlook for the Express Companies.

(From the "New York Times Annalist" of March 16th.)

FROM the decision of the United States Express Company to liquidate and retire from the field it may be inferred that there is no business left for the express companies to do with profit to themselves and that, therefore, in a little while, the parcel post will entirely supplant them. That is not the case. There is an increasing demand, especially in the areas where population is dense, for the rapid transportation of freight in less than carload quantities. The railroads are performing that service at a loss. The loss is owing partly to the fact that they are not properly equipped for the business and largely to the fact that they do not control the collection of the freight. Thus, you see to-day small quantities of freight moving in forty-ton railroad cars at a loss, and in express company cars, on passenger trains, at a profit. If the express companies will take this field they will be able to relieve the railroads of a lot of unprofitable business, and at the same time so to control the collection of the tonnage as to eliminate the waste of moving it in haphazard quantities. Instead of small freight parcels reaching a certain point both via freight and express cars, they would go either one way or the other. It is a field which the railroads could occupy for themselves, but which the express companies could more easily command. They have the facilities for collecting and carting the goods; the railroads have only the facilities for moving it after it has been delivered to their platforms. The express companies should become freight forwarders, taking the whole contract, to pick up freight at the shipper's outgoing door, and to deliver it anywhere in the world.

The Danger to the Express Companies.

(New York Tribune.)

THE stronger express companies still remaining the field can probably survive if the conditions under which they operate are made no less favorable than they are to-day. Their chief danger is in the uneconomic character of the competition which they face. They have to earn dividends. The Parcels Post can be operated indefinitely with a deficit. It can be operated with a deficit and call the deficit a surplus. There is a nominal surplus now, though upon a fair basis of payment for the services rendered by the railroads in carrying parcels for the postoffice there would be a deficit. The Government can always juggle charges about so as to create the appearance of a profit. It can make the freight rate payer pay for the carrying of parcels in the Parcels Post, as it now makes the senders of one class of mail pay a large part of the expenses of another class of mail.

In order that the express companies should have a fair chance, the Parcels Post should be operated upon a business basis. It should pay for the service it requires of the railroads, not make the freight rate payers pay for them. It should have an honest system of bookkeeping that will disclose the truth. The Government requires this of public service corporations; it should set them an example. It would be a pity if by the loose accounting methods which it scolds in others it should force to the wall, performers of a public service as necessary as the express companies are.

The Express Companies.

(New York Times.)

THE way of Congress with the relation of the parcel post to the express companies is too thorough for The Merchants' Association of this city. It wanted the express business reformed, not ruined. Now that there is talk of the liquidation of the express companies, the Association recalls how excellent was the service they rendered, and how inferior, comparatively, is the commercial service of the parcel post. The express companies collect their business, give receipts for what they collect, pay indemnity for losses, with special security against them, prevent damage in transit—whereas the Post Office does damage in examination of parcels—and do business through a wider range of classes. These are not only the affirmative excellences of the express companies, they also are the defects of the parcel post. To the extent that one of the two services cripples the other, and to the extent that the express companies retire from the unequal competition, the field is abandoned altogether, for the law disqualifies the postal parcel service from doing what the express companies do. It is the formal opinion of the Association that the postal parcel service cannot be extended so as to be a satisfactory substitute for the express companies.

Congress and the Interstate Commerce Commission are racing each other in the authorization of destructive and unfair rates to please the people, and the people are not pleased with the results after all. Those who get anything for less than its cost and worth always want more, and never can be satisfied with anything short of all there is. It is so with the I. W. W., and, it would seem, with the people themselves. They are willing to accept the postal service, although it is established over the prostrate forms of the express companies, and supplied on Robin Hood principles. The Post Office requisitions the services of the railways in the manner of Villa, although amid profound peace. The Post Office submits to the protest of its own staff that it is overworked and underpaid. And then Representative Lewis in his place in the Capitol says this unpaid-for accommodation to the people "has turned a deficit in the postal revenues of $7,000,000 to an $8,000,000 or $10,000,000 surplus in the first year of its operation." The first year is not yet over, and the bills have not yet been presented or paid.

The Panama Canal as an Aid to Râilroads.

THE "World's Work" for April contains an interesting article by Theodore P. Shonts, President of the Interborough Metropolitan Street Railway of New York, in which is discussed the opening of the Panama Canal with reference to its effect on the economies of the United States and the trade relations of this Nation with other countries. As Chairman of the Second Isthmian Canal Commission, Mr. Shonts acquired intimate knowledge of affairs pertaining to this great waterway and an interesting feature of his article, in view of the present status of the Canal tolls bill, has to do with the effect of the opening of the Canal on the traffic of the trans-continental railroads. We quote in part as follows:

"I do not hold what seems to be the popular view, that the opening of the Canal will have a serious effect upon the business of the transcontinental railroads of the United States; on the contrary, I am inclined to believe that it will be to their advantage so soon as trade conditions adjust themselves.

"The traffic of the transcontinental railroads that will be the most seriously affected is that which originates at Atlantic Coast points, destined to ports on the Pacific, and vice versa. With this traffic the steamers that operate by way of the canal will come into direct competition; and, as their rates will be lower and the time taken in transit approximately the same as is now taken by the railroads, diversion of business is naturally to be expected.

"The railroads may lose some of their cheaper tonnage, but this will be more than made up to them by the inevitable increase in higher class traffic that will be brought about by the development of the territory they serve."

Reference to the canal tolls bill and a coastwise merchant marine is made by Mr. Shonts as follows:

"The opening of the canal will undoubtedly stimulate the building of American steamers for the carriage of cargo between ports on the Atlantic and Pacific coasts of the United States, even if the free tolls clause in the canal act is suspended, since steamers of foreign registry will not be permitted to engage in this traffic."

Personal

Carl R. Gray.

CARL R. GRAY, who on March 10th, resigned from the presidency of the Great Northern Railway to become president of the Western Maryland Railway, was born September 28, 1867. He was educated at the Arkansas Industrial University and entered railway service in 1882, as telegraph operator for the St. Louis and San Francisco Railroad. Since that time he has been consecutively employed in the following manner—1882 to 1886, telegraph operator and agent; 1886 to 1887, clerk in the traffic department; 1887 to 1890, commercial agent; 1890 to 1897, division freight agent; 1897 to 1900, division superintendent; 1900 to 1904, superintendent of transportation; April 8, 1904 to November 4, 1904, general manager; 1904 to 1906, second vice-president and general manager; 1906 to 1909, second vice-president; 1909 to 1911, senior vice-president, all with the St. Louis and San Francisco Railroad. On May 1, 1911, Mr. Gray became president of the Spokane, Portland and Seattle Railway, and on May 15, 1912, was elected president of the Great Northern Railway.

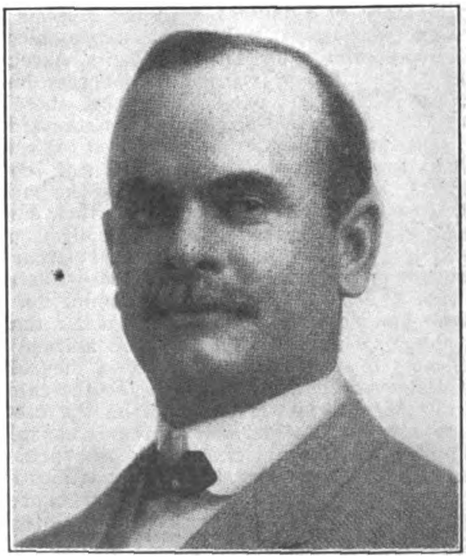
W. A. Garrett.

W. A. GARRETT, until recently vice-president of the Chicago Great Western, has been appointed chief executive officer for the receivers of the Pere Marquette, with headquarters at Detroit, Michigan.

Mr. Garrett was born at Canton, Miss., in 1861 and began railway work in 1876 as a messenger in the ticket office of the Ohio and Mississippi Railway. Subsequently he entered the employ of the St. Louis Union Depot Company, with whom he held various positions including that of office messenger clerk in the car department, time keeper, assistant paymaster, purchasing agent, conductor, yardmaster, secretary and assistant superintendent.

From 1893 until 1896, he was superintendent of the Terminal Railroad Association of St. Louis and also terminal superintendent of the Wabash Railroad, and in 1894 his authority was further extended to the superintendency of the St. Louis Merchants' Bridge Terminal Railway. On January 1, 1896, he became superintendent of the Western Division of the Wabash, being transferred in April of the following year to the middle division of the same road. August, 1899, found him superintendent of the Philadelphia Division of the Philadelphia and Reading, which position he held until September, 1900, when he was transferred to the New York Division. In March, 1902, he became general superintendent of the Philadelphia and Reading. In May, 1903, he accepted the position of General Manager of the Cincinnati, New Orleans and Texas Pacific and the Alabama Great Southern, where he remained until November, 1906, when he became vice-president of the Seaboard Air Line. The following year he was elected president of that road, which position he held until October, 1909, when he left the railway service to become vice-president of the T. H. Symington Company. From October 1, 1911 to September 18, 1912, he was chairman of the General Managers' Association of Chicago and the Association of Western Railways, leaving this position to become vice-president of the Chicago Great Western.

Mr. Garrett's career has been a remarkable one, even among railway officials, and has splendidly qualified him to handle the heavy responsibilities of his new position. He recognizes fully the necessity of conciliating public opinion, and it can be confidently predicted, that under his management, the patrons of his road will be given an absolutely square deal. In the rehabilitation of the Pere Marquette, Mr. Garrett has probably confronting him the most difficult problem of his career. His record fully justifies the prediction, however, that he will successfully meet it, and that the Pere Marquette has found an executive officer who will prove no small factor in the development of its full possibilities.



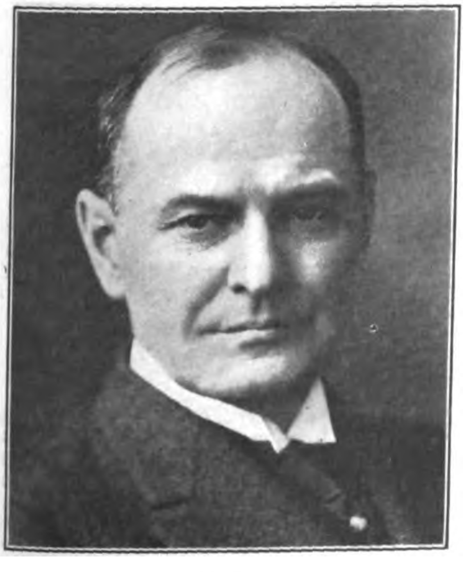
W. A. GARRETT.

J. M. Kurn.

J. M. KURN, who has been elected president and general manager of the Detroit, Toledo and Ironton Railroad Company, with office at Detroit, was born in 1870 in Mount Clemens, Michigan. He entered railway service in 1885, with the Michigan Central as telegraph operator, since which he has been consecutively, November 10, 1887 to 1892, with the Santa Fe as an operator and agent; 1892 to 1902, dispatcher, Pueblo, Colo.; 1902 to 1903, chief dispatcher; 1903 to June 27, 1905, trainmaster, June 27, to August 20, 1905, trainmaster, Las Vegas, N. M.; August 20, to December 30, 1905, superintendent of the Rio Grande Division, San Marcial, N. M.; January 1, 1906, to October 1, 1910, superintendent of New Mexico Division, with office in Las Vegas, N. M. On October 1, 1910 general superintendent, Northern District, Western Lines.

E. H. Lee.

E. H. LEE, who has recently been appointed vice-president of the Chicago and Western Indiana, retaining, at the same time, the position of chief engineer, was born in Dayton, Ohio, and was educated at the Ohio University and the University of Wooster. In the first few years of his railway service, he was largely engaged as rodman with the assistant engineers of various railroads including the Baltimore and Ohio, the Norfolk and Western, the New York, Chicago and St. Louis, the Union Pacific and the Wisconsin Central. From 1890 to 1893, he was chief engineer of the Elgin, Joliet and Eastern Railway and from 1893 to 1898, was engaged in private engineering practice and worked as a contractor. Since the latter year, he has been chief engineer of the Chicago and Western Indiana Railway Company and the Belt Railway Company of Chicago, which positions he held at the time of his recent appointment. Mr. Lee is a member of the American Society of Civil Engineers, the American Railway Engineering Association and is at the present time president of the Western Society of Engineers.



E. H. LEE.

Henry W. Thornton.

Henry W. Thornton.

HENRY W. THORNTON, whose recent appointment from the Long Island Railroad to the general managership of the Great Eastern Railway of England, has caused widespread comment in the press, was born in Logansport, Ind., in 1871. He began his railway career with the Pennsylvania Lines West of Pittsburgh in 1894, as draughtsman in the office of the chief engineer and held various positions in that office and in the construction department until 1897, when he was appointed supervisor at Columbus, Ohio. In the latter part of that year, he became assistant engineer of the Cincinnati Division and in 1899 was assigned to special work under the general manager. In November, of the same year, he was promoted to the position of engineer of maintenance of way of the Erie and Ashtabula Divisions and in 1901, became superintendent of the Marietta Division, going from there in 1902, to the position of superintendent of the Cleveland, Akron and Columbus Road, returning, however, to the Erie and Ashtabula Division a few months later as superintendent. On February 1, 1911, he was appointed assistant general superintendent of the Long Island and the following November became general superintendent.

J. M. Davis.

J. M. DAVIS has been appointed general manager of the Baltimore and Ohio Southwestern-Cincinnati, Hamilton and Dayton lines, with headquarters at Cincinnati, succeeding W. C. Loree, who resigned. The appointment which is announced by vice-president A. W. Thompson, the head of the operating department, is effective at once. Mr. Davis has been assistant general manager since January 1st.

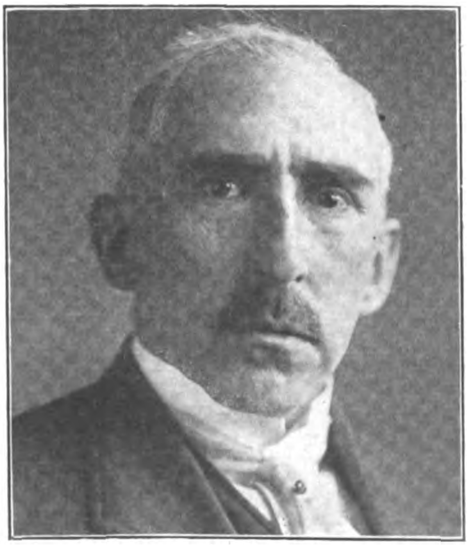
The new general manager of the Southwestern District of the Baltimore and Ohio began his railroad career in the Southwest and was later employed by the Great Northern, Erie, Union Pacific, and Southern Pacific Lines. Prior to entering Baltimore and Ohio service, the first of the year, he was general superintendent of the Southern Pacific Railroad at San Francisco.

J. M. Davis.

Jenks B. Jenkins.

JENKS B. JENKINS, who has been appointed valuation engineer of the Baltimore and Ohio System, has been advanced from the position of assistant engineer, with headquarters at Baltimore.

Mr. Jenkins has had wide experience in railroad and municipal engineering. He was born January 28, 1869, and was graduated from the Western University of Pennsylvania in June, 1888, after a four years' course. In 1887 he was engaged in railroad location work with an engineering firm and in May, 1888, became an assistant in the office of the City Engineer of Allegheny, Pa. Mr. Jenkins was employed as a structural steel draftsman in 1893, and in January, 1894, became a topographer for the Baltimore and Washington Traction and Tramway Company, an electric line. Later he was in charge of location of the Washington and Great Falls Electric Railway. Returning to Pittsburgh, he engaged in the private practice of engineering. From March, 1896, to December, 1897, he was a topographical draftsman in the department of street improvements of New York City. In June, 1898, he became assistant engineer of the board of public improvements of New York, in charge of street openings in the Borough of Queens.



Jenks B. Jenkins.

Mr. Jenkins became assistant engineer of the Baltimore and Ohio Railroad, May 1, 1900, having previously been in the maintenance of way and real estate departments of the company, and as an engineer on the Staten Island Rapid Transit Railroad, a New York terminal line of the Baltimore and Ohio.

John J. Koch.

JOHN J. KOCH, who on February 16th, was promoted to the position of assistant freight traffic manager of the Pennsylvania Lines West of Pittsburgh, was born in Pittsburgh in 1861. He entered the service of the Pennsylvania Company in the office of the general freight agent in 1879, and in 1881, was made clerk in the division freight agent's office. In 1884, he was appointed chief clerk in that office and in 1897 was promoted to division freight agent. Mr. Koch was appointed general freight agent of the Pennsylvania Company in 1908, which position he held at the time of his recent appointment.

John J. Koch.

G. S. McCabe.

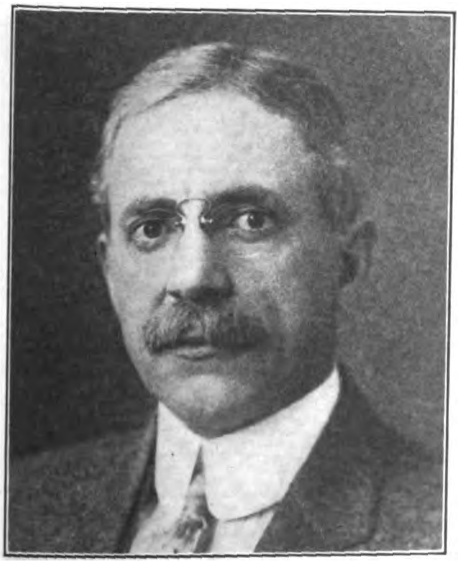
G. S. McCABE, who became general freight agent of the Pennsylvania Company, with headquarters at Pittsburgh, on February 16, 1914, was born at Sewickley, Penna., in 1873. He entered the service of the company as messenger in the general office of the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company at Columbus, Ohio, in 1889, and in 1894, was made clerk in the office of the di-

G. S. McCabe.

vision freight agent's office at Richmond, Ind. In 1896 he was appointed traveling freight agent with headquarters at Richmond, and in November of the same year, was promoted to be division freight agent at that city. In 1908, he became general western and division freight agent at Chicago and in 1910, was made general western and division freight agent of the Pennsylvania Company at the same city, which position he held at the time of his recent promotion.

S. C. Matthews.

S. C. MATTHEWS, who has recently been promoted to the position of assistant general freight agent of the Pennsylvania Company, with headquarters at Pittsburgh, was born at Cincinnati, Ohio, in 1868. He began work for the Pittsburgh, Cincinnati, Chicago and St. Louis Railway in 1882 as clerk. In 1885, he became voucher clerk in the division freight agent's office at Cincinnati, and in 1887 was promoted to the chief clerkship in the same office. In 1905, he was made division freight agent and held this position until his recent appointment.



S. C. Matthews.

James E. Weller.

JAMES E. WELLER, who has recently been promoted to the position of general western freight agent of the Pennsylvania Lines, with headquarters at Chicago, was born at North Liberty, Pa., in 1868. He was employed by the railroad in 1890 as rate clerk in the office of the division freight agent of the Pittsburgh, Cincinnati, Chicago and St. Louis Railroad at Pittsburgh. In 1891, he was made contracting agent of the Vandalia Railroad and in 1897, was appointed commercial agent. In 1906, he became district freight solicitor of the Pennsylvania Lines and the Vandalia Railroad and two years later was promoted to division freight agent of the Pan Handle, with headquarters at Pittsburgh. On June 1, 1910, he became general western and division freight agent of the Pan Handle with headquarters at Chicago, which position he held until his recent promotion.

James E. Weller.

W. P. Hinton.

W. P. HINTON, who has recently been appointed assistant passenger traffic manager of the Grand Trunk Pacific Railway and the Grand Trunk Pacific Coast Steamship Company, Limited, with headquarters at Winnipeg, Man., was born in Hintonburg, Ont., now part of the capital city of Ottawa, in 1871; educated in Ottawa and entered the service of the Canada Atlantic Railway Audit Department in that city in 1887. In 1891, entered the traffic department as rate clerk and in 1898 was ap-

W. P. HINTON.

pointed assistant general freight agent. Appointed general freight agent in 1901 of the Canada Atlantic and the Canada Atlantic Transit Company and in 1903, general freight and passenger agent. When the Canada Atlantic was taken over by the Grand Trunk in October, 1905, became general agent, passenger department, of the latter company in Ottawa in charge of immigration and trans-Atlantic steamship business. In January, 1907, was appointed assistant general passenger agent, Montreal, and in May, 1909, became the first general passenger agent of the Grand Trunk Pacific Railway, to which was added in 1910 the Grand Trunk Pacific Coast Steamship Company, Limited.

W. H. Abel.

W. H. ABEL, who became assistant passenger traffic manager of the Chicago & Alton Railroad at St. Louis, Mo., effective March 1st, claims Elizabethtown, Pa., as his birthplace. He entered the service of the passenger department of the Chicago & Alton Railroad, January 1, 1887, at Denver, Colo., and has occupied continuously since that time various positions as city passenger agent in Denver, traveling passenger agent in California, district passenger agent in the Southwest, division passenger agent at Springfield, Ill., and assistant general passenger agent at Kansas City, Mo. He has complete knowledge of the detail of passenger business and in his new position will have general supervision over all passenger traffic matters in the territory south of the Ohio River and west of the Mississippi River to the Pacific Coast.

Garnett King.

GARNETT KING, who recently was appointed general passenger agent of the El Paso and Southwestern System, with headquarters at El Paso, Texas, began his railroad career in 1900 with the Arizona and New Mexico in the capacity of bookkeeper and pay master. In 1903, he was appointed traveling freight and passenger agent of the El Paso and Southwestern and in 1907 became general agent for this road and for the Rock Island Lines with headquarters at El Paso. In 1909, he was promoted to the position of assistant general freight and passenger agent of the El Paso and Southwestern System and in 1913, was transferred to St. Louis as general agent of both freight and passenger department, which position he held at the time of his recent appointment.

T. W. Heintzelman.

T. W. HEINTZELMAN, who on February first, was promoted to the position of general superintendent of motive power of the Southern Pacific Railway Company, began his railroad service as fireman after having served as machinist's apprentice in the draughting room and as foreman in a machine shop. He later became a locomotive engineer and was subsequently made general foreman and assistant master mechanic on the Chicago, St. Paul, Minneapolis and Omaha. From this position he went to the Chicago, St. Paul and Kansas City as master mechanic, with which road he remained until 1888, when he took service with the Southern Pacific Company in a similar capacity. In 1902, he was promoted to the position of superintendent of motive power of the Northern District of this Company, which position he occupied until his recent promotion.

T. W. HEINTZELMAN.

S. F. Clark.

SAMUEL F. CLARK commenced his railroad career April 20, 1896, in the general stores of the Great Northern Railway Company at St. Paul, Minn., and for fourteen years was Division and District Storekeeper at various points on the Great Northern Line.

November 1, 1909, he resigned from the Great Northern Railway Company as storekeeper at Hillyard, Wash. store, which is the Western

S. F. Clark.

District storehouse for the Great Northern Railway Company, and immediately assumed charge of the general storehouse of the Spokane, Portland and Seattle Railway Company, at Vancouver, Washington, remaining there until August 1, 1911, when he was transferred to the Disbursements Bureau of the Accounting Department of the Spokane, Portland & Seattle Railway Company at Portland, Oregon, remaining in this capacity until February 1, 1914, at which time he was appointed general purchasing agent of the Hill Lines in this territory.

W. W. Slater.

AFTER over half a century's service as a railroad man, W. W. Slater, dean of signal engineers, has retired from the service of the Southern Pacific Company on a pension. It was Slater who invented the principle of the automatic block signal and his personality was a contributing factor in the Southern Pacific's pioneer work of protecting its lines with the automatic block.

He was born in January, 1849, and began his railroad service in 1862, as a newsboy on Columbus, Pequa and Indiana Railroad. From 1864 to 1868, he worked as telegraph operator on various eastern railroads and in 1868 he went to Salt Lake by stage to engage in the same work. In 1869, he opened the first telegraph office in Ogden. This was used exclusively for the business of the Southern Pacific and Union Pacific. Three months after opening this office, Slater saw the first Union Pacific train arrive. It was greeted by a large number of people, many of whom had never seen a railroad or an engine. The end of the Central Pacific track at this time was near Montello.

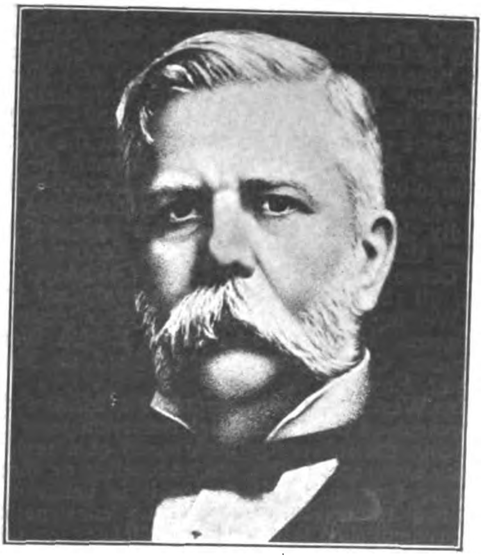
In 1869 he became freight operator on the San Francisco and San Jose Railroad. In June of that year he was made material clerk and operator at Warm Springs, securing track material for building the road from a point near Niles to the San Joaquin bridge, where it connected with the line being built from Sacramenta, and also from a point near Niles, to a connection with the Cohen Road at Hayward. This was completed in October, 1869, and the first through overland passenger train was run to Alameda to make boat connection for San Francisco in 1869. In 1865, he became signal engineer of the company.

Obituary

George Westinghouse.

GEORGE WESTINGHOUSE, the famous inventor and engineer, died at his New York City residence on March 12, 1914. The mental alertness and wonderful vitality that had so characterized his brilliant career, remained with him to the end. He was until the last, actively associated with a large number of industries, but during the last few years, he had begun a process of transferring his responsibilities to the shoulders of his trusted lieutenants and his demise therefore, will not cause any material change in the policy of operation of the companies so indelibly linked with the name of Westinghouse.

Mr. Westinghouse was born at Central Bridge, Schoharie County, New York, in 1846. He is of German descent and his father, who was an inventor, removed his family to Schenectady, New York, where he established the Schenectady Agricultural Works. The boy attended the public and high schools of the town and spent much of his leisure time in his father's machine shop. Before he was fifteen, he invented and made a rotary engine and at an early age, passed an



George Westinghouse.

examination for the position of assistant engineer in the United States Army.

In June, 1863, at the age of seventeen, he enlisted in the Twelfth New York National Guard and in November of the same year, was honorably discharged. He then joined the Sixtieth New York Cavalry as Corporal and was again honorably discharged in November of the following year. A month later, he accepted an appointment as third assistant engineer in the United States Navy. At the close of the war, Mr. Westinghouse tendered his resignation and was honorably discharged.

He returned to his home town and entered Union College where he remained until the close of his Sophomore year.

His first railroad invention occurred in 1865, when he developed a device for replacing railroad cars upon the track. His first idea of an automatic brake took the form of an attachment to the couplers, which was unsuccessful. He then experimented with steam, but this also proved unsatisfactory. At this point his attention was called, through a magazine article, to the employment of compressed air for certain purposes and this gave him the idea, which later developed into the famous Westinghouse air brake, used throughout the United States and in many sections of this civilized world. The first air brake patent was issued in April, 1869, and the Westinghouse Air Brake Company was formed on the 20th of July following. Manufacturing works were begun in 1869 and completed in 1870. From 1871 to 1882, Mr. Westinghouse was abroad introducing the air brake in England and other foreign countries, and making it applicable to the various conditions to be met there.

In the meantime, he invented the "automatic" feature of the brake which overcame the imperfections in the first form and removed the danger from the parting of trains on steep grades. In 1886, he invented the "quick action" brake, the improvement being made in what is known as the "triple-valve." By this valve, it became practicable to apply all brakes on a train of fifty freight cars in two seconds. Mr. Westinghouse also turned his inventive genius in the direction of signal work and it was he who developed and patented the system now manufactured by the Union Switch and Signal Company. The "pneumatic interlocking switch and signal apparatus" has been successfully introduced in Boston, Jersey City, Philadelphia, Chicago, St. Louis and many other places. In 1886, the Westinghouse Electric Company was formed for the manufacture of electric lamps and electric lighting apparatus, and the business developed so rapidly that in 1889 and 1890 this company absorbed the United States Electric Company and the Consolidated Electric Light Company. In 1891, all these properties were reorganized into the Westinghouse Electric and Manufacturing Company. In 1895, works of the British Westinghouse Company were established at Manchester, England.

Mr. Westinghouse is responsible for the development of the mechanical reduction gear for reducing the inherently high speed of a turbine to the slow speed of a ship propeller or direct current dynamo. This device it is believed is destined to revolutionize marine construction. He accomplished this work in collaboration with the late Admiral George W. Melville, U. S. N., and John H. McAlpine. Within recent years he has also occupied himself with the development of an air spring for automobiles and motor trucks. The alternating current transmission which is so widely used to-day to carry power from distant waterfalls and central stations for lighting purposes, is the result of Mr. Westinghouse's steadfast belief that this class of high tension transmission would make distant electrical distribution possible. In spite of opposition, ridicule and unfair efforts, the value of his methods have received world-wide recognition, and constitute a glowing tribute to his foresight and perseverance.

The same opposition was apparent in the more recent developments of his company with reference to alternating current traction by means of the single phase motor, which has now been wrought into an accomplished reality in the case of a number of traction lines, railroad terminals and tunnels.

Originating with one of the most important inventions connected with railways, the growth of the various Westinghouse industries has been largely identified with railway progress, and it is interesting to note that this progress has represented increased security of life, increased capacity of the railway and reduced cost of operation. It is simply stating a simple fact to say that Mr. Westinghouse has been a great factor in the advance of civilization as represented by the important part he has played by introducing improved means of transportation.

Chance has had no place in the success of this man. It has been due to his foresight, courage and technical skill. As with his first invention, the air brake, the different kinds of apparatus has been developed to answer actual needs, in some cases acknowledged generally, and in others foreseen by him with remarkable prevision. When the apparatus had passed the experimental state and was ready for commercial exploitation, he established factories which are themselves models, and which show the same anticipation of future development. Not only are the buildings handsome and well equipped with the best tools, but the comfort of the employes has been considered in every respect. It is worth noting that the nine-hour day, or rather the fifty-four hour week, was started in the Air Brake Works in 1869, and has been adopted in all the other works as they have been established.

Owing to his many achievements in mechanics, electricity, steam and gas, his name was known the world over, and he had many honorable distinctions conferred upon him for his achievements and in recognition of the services he rendered the various branches of engineering. His alma mater, Union College of Schenectady, conferred upon him the degree of doctor of philosophy. He was decorated with the order of the Legion of Honor, with the order of the Royal Crown of Italy, with the order of Leopold of Belgium. He was the second recipient of the John Fritz medal. He received the degree of doctor of engineering from the Koenigliche Technische Hochschule of Berlin, Germany. He was an honorary member of the American Society of Mechanical Engineers, of which body he was also president in 1910.

He was one of the two honorary members of the American Society for the Advancement of Science. He was an honorary member of the National Electric Light Association of America.

He was awarded the Scott premium and medal by the Franklin Institute of the State of Pennsylvania. He received the Edison gold medal for meritorious achievements in the alternating current system of electrical distribution. He received the Grashof gold medal from the Society of German Engineers in Germany, which acknowledged him the greatest American engineer.

Mr. Westinghouse was connected with a large number of industries at home and abroad, many of which bore his name. He was president and director of Westinghouse Air Brake Co., Westinghouse Machine Co., Nernst Lamp Company, The Union Swith & Signal Co., Societe Anonyme Westinghouse, Paris; Cooper Hewitt Electric Co., Pittsburgh Meter Co., Societe Italiene Westinghouse, Italy; The East Pittsburgh Improvement Co., The Westinghouse Brake Co., Ltd., London, Westinghouse Cooper Hewitt Company, London, Westinghouse Friction Draft Gear Co., Westinghouse Metal Filament Lamp Co., Ltd., London.

He was also chairman of the Board of Directors of Westinghouse Electric Co., Ltd., London, and Director, Westinghouse Elec. & Mfg. Co., The Traction & Power Securities Co., Westinghouse Metallfaden Gluhlampenfabrik, Vienna.

The Westinghouse Companies employ 50,000 men, on whom 150,000 persons are dependent. The total capitalization of all the companies is $200,000,000.

Mr. Westinghouse was married August 8, 1867 at Brooklyn, N. Y., to Marguerite Franklin Walker. They had one son, George, who is a graduate of Yale, and was recently married to the Honorable Evelyn Violet Brocklebank. His wife and son survive him.

A. B. Adams, division master mechanic of the Gulf, Colorado & Santa Fe Railway, at Silsbee, Texas, died suddenly February 16th, aged 49 years.

John Y. Boyd, a former member of the Pennsylvania State Railroad Commission, died at his home in Harrisburg, March 9th, at the age of 52.

Col. R. G. Butler, former general agent of the Grand Trunk Railway, at Milwaukee, Wis., died in that city March 18th, aged seventy years.

Adolph Butze, formerly general purchasing agent of the Grand Trunk, died at St. Louis, Mo., on March 3rd, aged 68 years. Mr. Butze began railway work in 1868 with the Wabash, in whose employ he remained for some time. From 1885 to 1887 he was in the purchasing department of the Missouri Pacific, and then became private secretary to the general manager of the Chicago, Indianapolis & Louisville. He was made general purchasing agent of the Grand Trunk in 1896, retiring on January 1, 1912, under the pension rules of the company.

Douglas T. Chase, formerly general superintendent of the Atchison, Topeka & Santa Fe Railway, died at Macon, Ill., February 20th, aged 78 years.

Thomas M. Connors, superintendent of the Hocking Valley, at Columbus, Ohio, died at a hotel in Toledo on March 17th. He was born on July 15, 1862, at Toronto, Ont., and was educated in Erie County, Pennsylvania, schools. In 1878 he began railway work as a telegraph operator on the Philadelphia & Erie, now a part of the Pennsylvania Railroad. He was then consecutively telegraph operator of the Standard Oil Company, the Cincinnati, Hamilton & Dayton Railroad and the Cleveland, Cincinnati, Chicago & St. Louis. From 1890 to 1891 he was train dispatcher on the Cincinnati, Hamilton & Dayton, and then to 1903 was trainmaster on the Kanawha & Michigan. He was subsequently trainmaster on the Toledo & Ohio Central and the Hocking Valley. From 1906 to 1907 he was assistant superintendent of the Toledo & Ohio Central and then was superintendent of the Kanawha & Michigan until 1909, when he was appointed superintendent of the Hocking Valley.

D. Clem Deaver, immigration agent of the Chicago, Burlington & Quincy Railroad, with office at Omaha, Neb., died in that city, February 23rd.

D. E. Fitzgerald, former assistant superintendent of motive power of St. Louis & San Francisco Railroad, lost his life in the fire which destroyed Missouri Athletic Club in St. Louis, March 9th. Mr. Fitzgerald resigned his position with the railroad in February last, to take a position with the Pierce Oil Corporation.

Edward Bourne Gibbs, formerly connected with the Union Pacific at North Platte, Neb., died on March 5th at St. Louis, Mo., aged 80 years. Mr. Gibbs was manager of power and rolling stock of the old Platte County Railroad in 1863, was master of machinery and motive power of the St. Louis & Iron Mountain in 1868, and in 1880 became connected with the Union Pacific at North Platte, Neb. Later he was in charge of the Oregon Division of that road at Portland, Ore., and subsequently returned to North Platte, retiring from active service in 1904.

John Grant, of 5886 Ellsworth Avenue, died in his home yesterday. Mr. Grant was born in County Down, Ireland. He was employed as a freight agent at the Anderson Street Station of the Pennsylvania Railroad Company, and had been in the employ of the company for the last 46 years. He was a member of the Sacred Heart Catholic Church and was secretary of the Church Committee and secretary of the Holy Name Society of the church. He was a member of Duquesne Council No. 264, Knights of Columbus, and Branch 34, C. M. B. A. His widow, three children, John A Grant, of Emsworth; Mrs. Minnie E. Denny, of Homewood; and Miss Loretta F. Grant, at home; two brothers, James Grant, of Wilkinsburg and Patrick Grant, of County Down, Ireland, and one sister, Elizabeth Grant, in Ireland, survive.

Frank N. Hall, superintendent and general freight and passenger agent of the Moncton & Buctouche Railway, aged 48 years, met death in a railway accident near Moncton, N. B., February 20th.

W. L. Hall, general attorney of the Texas & Pacific, with headquarters at Dallas, Texas, died recently at the age of 67.

J. J. Harding, formerly engineer of masonry construction on the Chicago, Milwaukee & St. Paul, at Chicago, died at Seattle, Wash., on February 28th. He had been in the service of the St. Paul from 1895 to 1910.

J. W. Jacomb-Hood, M. I. C. E., of London, England, chief resident engineer of the London & Southwestern, died suddenly March 6th, while riding horseback, alone, the cause of death being, presumably, heart disease. Mr. Jacomb-Hood was known to many Americans. He was born at Redhill in 1859. He was educated in engineering and did engineering work on the London & Southwestern at the age of 18. He had been chief resident engineer since 1901, and had had charge of many important improvements on the London & Southwestern, including the rebuilding of Waterloo Station.

G. D. Hughes, trainmaster of the Denver & Rio Grande Railroad at Helper, Utah, died at Salt Lake City, February 28th, aged 36 years.

D. C. Idler, former master mechanic of the Vandalia Railroad, died at Indianapolis, Ind., February 23rd.

David O. Ives, traffic manager of the Boston Chamber of Commerce, died at his home in Boston, March 18th, at the age of 63. Mr. Ives was for about twenty years in the railway service, having been general traffic manager of the Wabash and affiliated lines from August, 1905, to July, 1908. Before his connection with the Wabash he was for many years in the traffic department of the Burlington Lines in Iowa and Missouri.

Edwin Milner, who was a director of the New York, New Haven & Hartford from 1902 until his resignation on January 15th of this year, on account of ill health, died at his home in Moosup, Conn., on February 19th, at the age of 71.

James W. Munn, assistant general passenger and ticket agent of the Chicago & North Western, with office at Chicago, died on March 13th, at his residence in Chicago. Mr. Munn had been connected with the North Western since 1880, and had been assistant general passenger and ticket agent since September, 1912.

Arthur M. Richards, former superintendent of the Chicago & Alton Railroad, died at his home in Chicago, February 26th. Mr. Richards was born in Chester, England, in 1838.

John J. Rogers, commercial agent of the Missouri, Kansas & Texas at Chicago, died in that city, March 7th, aged 67 years. Mr. Rogers had been connected with the Missouri, Kansas & Texas since November, 1888, and had been in railway service 49 years.

W. B. Shepperd, traveling freight and passenger agent of the Fort Worth & Denver City, with headquarters at Wichita Falls, Texas, died in that city on March 5th, aged 30 years.

J. C. Stuart, former vice-president of the Erie Railroad, died at the Garden City Hotel, Garden City, L. I., March 4th, aged 53 years. Mr. Stuart was relieved of the duties of vice-president on account of ill health on January 1st, and since then has been assistant to the president. He took up his life's work while hardly more than a boy. In January, 1888, he was made chief train dispatcher of the west division of the Chicago & North Western Railway, a position he held until June, 1890. Then he was made assistant superintendent of the Galena Division in June, 1892. This position he held until February, 1898, when he accepted the position of general superintendent of the Chicago, St. Paul, Minneapolis & Omaha Railway. Two years later he went to the Baltimore & Ohio Railroad as general superintendent of the middle and northwestern divisions. In September, 1901, he was promoted to general superintendent of transportation of the Baltimore & Ohio System. Mr. Stuart took service with the Erie Railroad on January 1, 1903, when he was made general superintendent of the Ohio Division and Chicago & Erie. After a year's work he was made general manager of the Erie, the position he held up to the time of his appointment as vice-president in November, 1909. In 1912, Mr. Stuart was chairman of the general managers' committee of Eastern roads which successfully carried through the arbitration with the engineers.

William C. Thompson, former auditor of the Southern Railway, died at Thomasville, Ga., March 4th, aged 75 years.

John M. Turner, formerly general manager of the Georgia & Florida, died suddenly on March 21st, at Maxton, N. C.

W. H. Underwood, assistant to passenger traffic manager of the New York Central Lines at Chicago, died in Chicago on Wednesday. He was born May 6, 1858, at Rochester, N. Y., and began railway work in 1874. He was a clerk in the office of the assistant general superintendent of the Michigan Central and clerk in the city ticket office of the Canada Southern at Detroit, Mich., until July, 1878, when he was made city passenger and ticket agent of the Wabash in that city. In April, 1883, he was appointed western passenger agent of the Michigan Central at Chicago, and four years later he became general eastern passenger agent at Buffalo, N. Y. He was promoted to assistant general passenger agent of the latter road in April, 1905, and in September, 1913, was appointed assistant to the passenger traffic manager of the New York Central Lines West at Chicago.

Elhanan Zook, formerly superintendent of construction of the Panama Railroad, until January 4, 1914, died at Philadelphia on January 26th. He had been a roadmaster and trainmaster on the Chicago, Burlington & Quincy, and entered the service of the Isthmian Canal Commission in 1905 as assistant engineer. He was later supervisor, roadmaster, engineer of maintenance, and from June 15, 1913, to January 4, 1914, superintendent of construction.

A New Floating Palace

ON May 30th, the Cunard Steamship Company puts into service their new steamship Aquitania, which represents the last word in ocean-going vessels of the trans-atlantic passenger type. This new marine marvel embodies all those qualities conducive to the structural strength, comfortable habitation, regularity and economy of propulsion at high speed and perfect stability. The following illustrations give some idea of the luxurious appointments of this modern floating hotel.

The Aquitania is 901 feet over-all, with a beam of 97 feet and depth of 64 feet and a displacement of 55,000 tons. A normal sea speed of 23 knots is provided thus enabling the trip from New York to be made in about six days. There are accommodations for 4,210 persons, and of this number 876 will travel first-class; 594 second-class and over 1,700 third-class. The crew numbers nearly a thousand.

The ship is built on the double-bottom principle. The whole double bottom is braced together by longitudinal and transverse struts, and is divided into over forty separate watertight compartments. To meet the stress set up by great waves on the Atlantic, certain parts of the sides or hull are hydraulically riveted and have as much as eight rows of rivets.

An important feature in the Aquitania is that for quite one-half of the length there is that great desideratum, a ship within a ship.. In other words there are two shells of nearly 500 feet of the length of the ship. In addition to this important sea-excluding provision, there are sixteen bulkheads extending athwartship from the port to starboard side. These bulkheads too, have been specially stiffened. Moreover, the decks are made watertight. There is a special arrangement of tanks amidships in order to counteract any tendency of rolling.

As to the general arrangement of the various decks for the convenience and accommodation of passengers, lounge and conservatory combined occupy a space about 100 feet square on deck "A." On the same deck is the first-class smoking room, which will be a particularly pleasing apartment. On this deck also there is the first-class drawing-room forward.

The next deck, "B," is taken up almost exclusively with suites of rooms. There is abundant promenading space, and here again the practice of screening off the side of the ship by sliding windows is adopted, in order to afford protection and an uninterrupted view of the sea for passengers who do not wish to sit in the open.

The third deck, "C," is given over entirely to the staterooms, and fourth deck, "D," to staterooms and the restaurants and cuisine department. The First Class Restaurant is a compartment considerably over 100 feet in length, and the full width of the ship. Forward of it there is a foyer nearly fifty feet long.

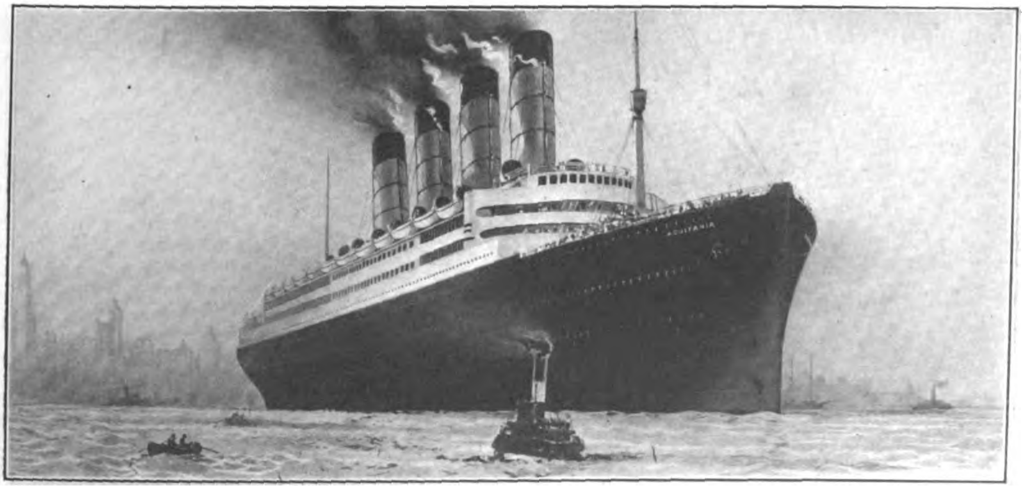
The next deck, "E," is taken up in the central part with the swimming bath and gymnasium, and storerooms for the cuisine department.

The dining saloon for the second class passengers is on the same deck as the first-class dining saloon, but abaft the cuisine department.

The third-class passengers are particularly well catered for in the arrangement of public rooms, staterooms and promenades.

As to propulsion, the turbine machinery working the four shafts, represents the absolutely latest practice. The high-pressure turbine is on one of the wing shafts, while the intermediate-pressure turbine is on the other wing shaft. The low-pressure turbines are on the two inner shafts. The condensing and auxiliary machinery is divided between two separate watertight compartments, thus the engines are distributed over five compartments.

There are astern turbines on all four shafts. Should any turbine break down the steam can be passed to the others, the power of the remaining turbines can be so increased that there need be very little, if any, falling off in speed. While at sea all four shafts will be used, arrangements have been made so that in harbor and particularly in docks, only the inner shafts will be worked. It need scarcely be said that in the engine room every auxiliary which will con-



THE CUNARD LINES NEW STEAMSHIP AQUITANIA.

The Magnificent Restaurant of the Aquitania.

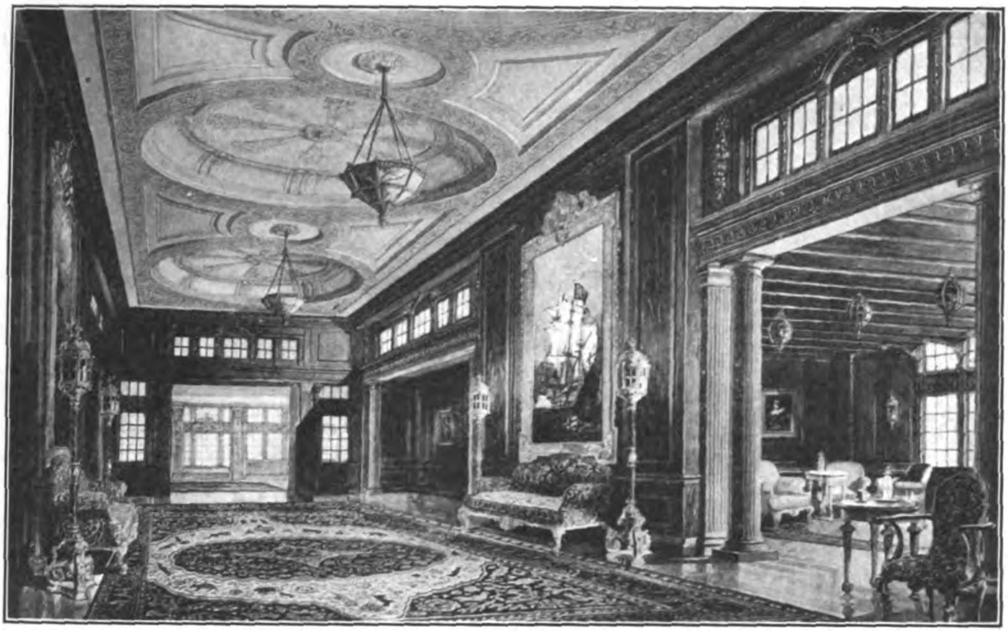
duce to safety and economy has been introduced. The auxiliaries of course, include very extensive refrigerating appliances in connection with the storage of food supplies for the passengers and crew.

The electric power station is equal almost to that of many towns. Not only is the ship very extensively lighted by electricity, but the current is largely used for motors. There are also about 10,000 lamps, and in addition, the electric current is used in connection with cabin bells, telephones, fire-alarms, a complete system of electric clocks, indicators for the watertight door machinery, and other similar purposes.

Steam is supplied from twenty-one boilers each with eight furnaces, and of very considerable power and weight. The boilers are distributed over four rooms. Each of the first, second and third boiler rooms from the bow contains six boilers, while the fourth boiler room has only three boilers.

The four funnels rise to a height of 164 feet from the bottom of the ship and 151 feet from the fire grates of the respective boilers. The boiler rooms, like the engine room, are well equipped with every labor economizing appliance. One of the features of the arrangement of the accommodation for the crew is that it is detached

The First-Class Lounge.



A PORTION OF THE FIRST-CLASS SMOKE ROOM.

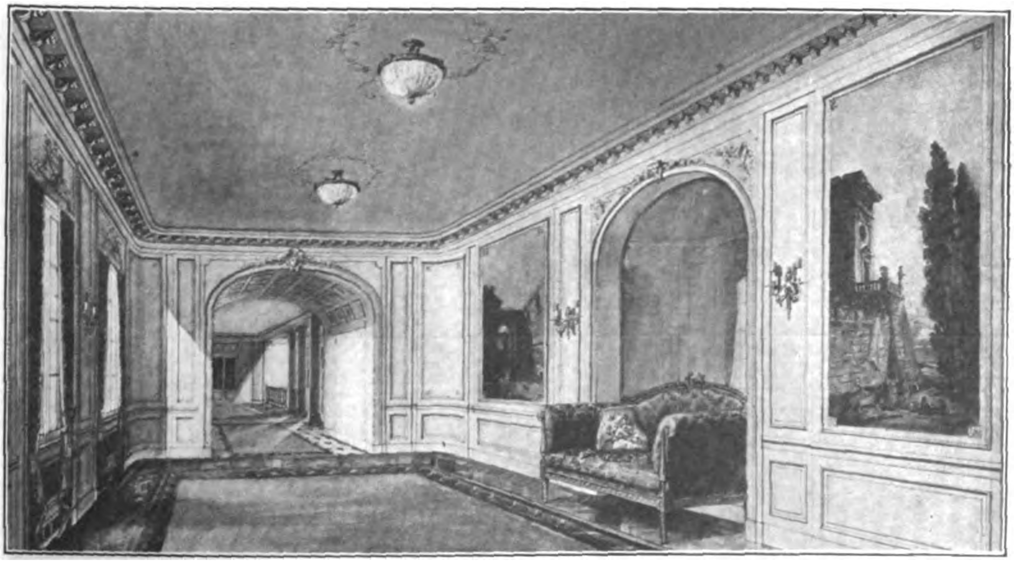
and quite separate from that provided for the passengers.

Regarding the appliances associated with the anchoring, manoeuvring and navigating of the ship the cables are the largest so far fitted, the links being made up of steel about four inches in diameter, while the anchors are each eleven tons in weight. The steering gear is located well below the waterline, where it works direct on to the tiller head. The watertight doors are fitted with Stone-Lloyd quick-closing gear, the officer on the bridge having complete control over every door so that all or each may be closed simultaneously.

The division of the ship into watertight compartments is much more extensive than is required by any regulations yet made. There are two forty feet and two thirty feet motor lifeboats, which will in an emergency, be mother boats to all the other boats, and be able to tow if necessary. Of large rowing boats there are twenty-five and also a large number of collapsible boats. The great majority of the boats are placed under davits and the collapsible boats are arranged, some of them under the ordinary lifeboats and others so that they can easily be moved across the deck on skids to the davits. The motor boats are fitted with wireless telegraphy.

The diameter of funnels is 22 x 15 feet.

The seven ash expellers are situated in the



FIRST-CLASS A SALON.

stokehold, and are used to discharge the ashes through the ship's side below water, clear of all suction pipes aft of the expeller.

They are each actuated by a steam turbine driven centrifugal pump. The ashes are shovelled into a hopper or trough, through a grating which regulates their size, then they are drawn into the expeller and discharged into the sea.

This expeller is so devised that it creates a vacuum about the hopper, drawing in ashes or anything else that might be placed in hopper, and discharging them into the sea, but it is impossible for the sea to return into the ship, as the moment the expeller is shut off an automatic valve closes all communication between hopper and sea.

The Chief Engineer is provided with a well-equipped office and a qualified engineer to do his clerical work. He may, while sitting at his desk, be in close communication with every part of the ship by telephone, and also may communicate with the engineer on watch through a loud-speaking telephone, which can be heard very distinctly from all parts of the office, and is connected to the starting platform in the engine room below. This is, of course, invaluable when the engineer requires the chief's advice in a possible emergency or if the chief has to issue his orders promptly, and is a great advance on the old-fashioned speaking tube. On the wall of the office is fitted a pressure recorder which automatically records the pressure carried on the boilers at every instant throughout the voyage. This enables the chief engineer to keep a close check on the efficiency of his firemen and the engineers in charge of the various stokeholds.

He has also in front of him a dial shaped like the face of a clock but marked in revolutions. This instrument, known as the revolution indicator, is operated by an electric machine on each turbine in the engine room below, so that if he desires to know what revolutions are being made by any turbine he has to simply turn a handle connected with a pointer opposite to the mark H. P. or L. P., as the case may be, and at once the revolutions can be read off the dial. Each propeller goes round 175 times per minute when at full speed.

While the Aquitania has been under construction the ventilation of stokehold and the engine room has been thoroughly considered and numerous experiments made until it is as perfect as modern engineering science can make it.

The pumping arrangements of the Aquitania will be the most complete of any ship afloat. Some idea of the enormous installation may be gained by the fact that nearly 4,000,000 gallons of water can be pumped out in one hour.

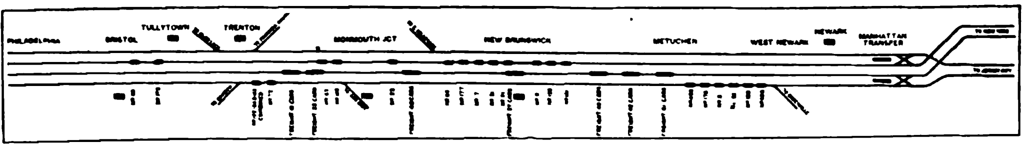
As is only to be expected in such a large ship the staterooms are of exceptional size. They are all above the water line, and with the exception of those designed to accommodate parties of three persons, none of the rooms are fitted with upper berths. Wooden bedsteads are provided, and the wardrobes and other fittings are on an unusually large scale. There is hot and cold running fresh water, and the old-fashioned tip-up wash basins have been entirely done away with. In their place are large porcelain basins, above which are expansive mirrors. Full-length mirrors have also been provided in a number of the staterooms on the inside of the wardrobe doors. An important point is the provision of proper systems of ventilation, giving a continual supply of fresh air, and lighting arrangements.

The vessel also contains a first-class swimming bath. At the side of the baths are a number of cubicles with hot and cold douches. The gymnasium adjoins the swimming bath and is fitted with all those appliances for recreation and exercise associated with the most modern and complete gymnasium.

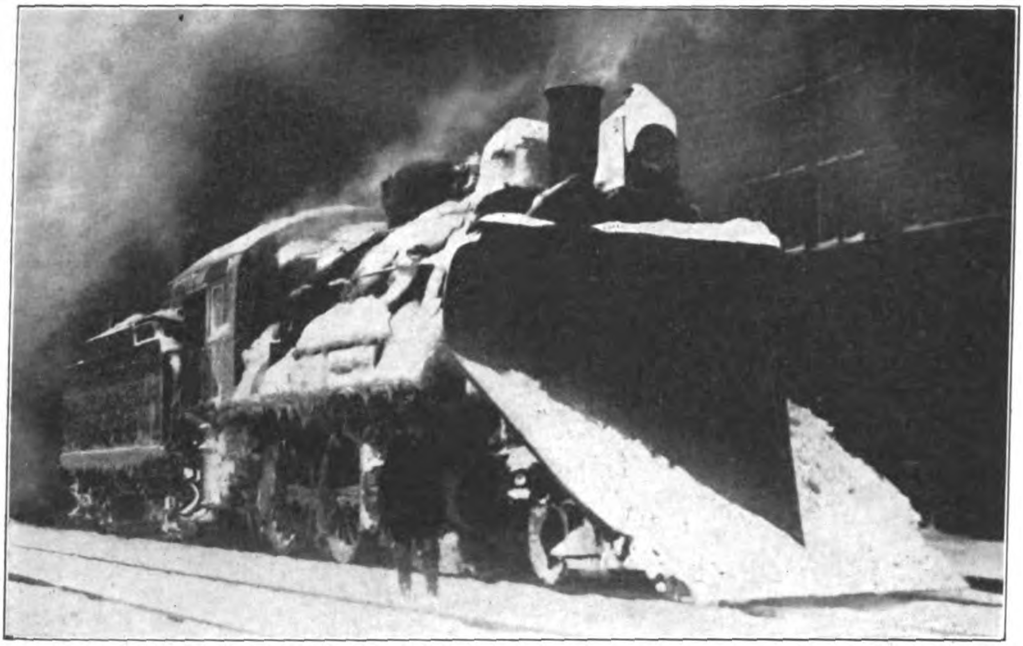
How a Great Railroad Copes with a Blizzard

JUST as the Eastern railways were beginning to congratulate themselves upon the fact of a mild winter with no great snow storms to seriously interrupt traffic and greatly increase operating expenses, the blizzard of March 1st and 2d spread across New Jersey, crippling the railways of that State worse than any other storm in their history.

So severe was its effect that it paralyzed the main line of the Pennsylvania Railroad between New York and Philadelphia, (one of the busiest pieces of railroad in the world) for twenty-four hours. How completely was the tie-up, is shown by the following diagram, the longer arrows denoting the freight train, while the smaller ones refer to the passenger trains. As indicated, twenty-one passenger trains were held up during this period, interrupting traffic between the north and south and between the east and west. Not only was the passenger and freight service temporarily put out of commission, but owing to the terrific gales which accompanied the storm, telegraph wires were down in all directions, adding to the confusion and handicapping the efforts made to re-establish the service. Officials of the Pennsylvania Railroad state that it has cost the road $500,000 to repair the actual damage done and that the loss direct and indirect will amount to $2,000,000.



This diagram shows where trains were stalled on the New York division of the Pennsylvania Railroad during the storm of March 14. The longer arrows denote freight trains and the shorter arrows the passenger trains. As the diagram indicates, there were twenty-one passenger trains stalled between Philadelphia and New York during this storm.



THE APPEARANCE OF ONE OF THE PENNSYLVANIA RAILROAD'S SNOW PLOWS AFTER ITS FIGHT WITH THE DRIFTS WHICH WERE PILED HIGH BETWEEN THE CITIES OF PHILADELPHIA AND NEW YORK AS THE RESULT OF THE STORM OF MARCH 1ST AND 2ND.

How a great railroad fights a storm of this character is interestingly set forth in a bulletin just issued by the Pennsylvania Railroad. Most railroads have a regular storm manual, a book of some thirty odd pages which outlines the work every man is to do in case of a snow storm. No orders are given, they are not needed. Railroad men go out on the line intuitively when trouble seems imminent. They know when a train once gets stalled in a heavy storm, it is doubly hard to start it, and the thing to do is to keep as many trains as possible on the road, but to make them light and equip them with extra locomotives so that they can make speed and plow the snow from the tracks before it gets deep enough to halt the trains.

In coping with the storm of March 1st and 2d, conditions prevailed which required courage, action, ingenuity and initiative. Many officers and employes worked for forty-eight hours without sleep. The superintendent and engineer of maintenance of way and the division operator were on the job from early Sunday afternoon until late Monday, when the blockade was broken. It was their duty to send out trainload after trainload of men to be followed by the necessary commissary trains and wreck trains. They kept in touch by a round about long distance telephone wire with Philadelphia, where others were working to free the division from the storm's grip.

Men out on the road had only one order and that was "get the line open and keep it open." By two or three o'clock Monday morning the east end of the New York division was covered with work trains, wreck trains, and trains full of laborers from Jersey City. Snow plows were bucking the drifts and laborers were shoveling the snow and removing telegraph poles as they came upon them. Drifts four and five feet deep were frequently encountered, while in a number of localities drifts to the extent of ten feet had to be removed.

Laborers were procured from every available source. Harrisburg sent 300 men and Altoona sent 300 on the first order and 500 later on Monday morning. Other gangs came from Pittsburgh and Baltimore, while wreck trains from Renovo and Sunbury, with crews trained to fight blizzards, were rushed to the scene of trouble. From Philadelphia, trainloads of snow shovelers were dispatched as fast as they could be obtained by contractors, and by noon of Monday there were no less than 5,000 men shoveling snow between Jersey City and Philadelphia. As a brakeman of a freight train said when he saw one thousand men at work, "There are enough men out there to eat it."

THIS ENGINE WAS SUCCESSFULLY EMPLOYED IN BUCKING THE DRIFTS ON THE TRENTON DIVISION.

SHOVELING SNOW IN A RAGING BLIZZARD NEAR BRISTOL ON THE AFTERNOON OF MARCH 2ND. THE TIME THE PHOTOGRAPH WAS TAKEN THE WIND WAS BLOWING FIFTY MILES AN HOUR, AND IT WAS SO COLD THAT THE LABORERS COULD NOT STAY OUT OF THE CARS MORE THAN FIVE MINUTES AT A TIME.

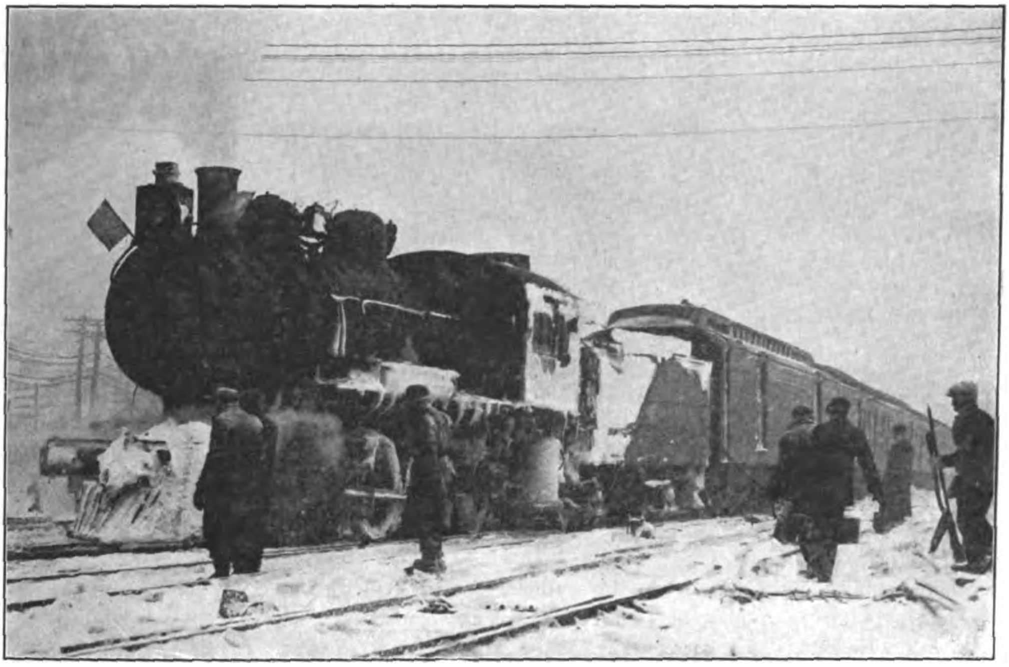
At nine o'clock on Monday morning the storm appeared to have obtained complete mastery, and not a regular westbound train on the New York division was moving, except those that were already out and stranded. Eight passenger trains were stalled near New Brunswick and Millstone Junction; seven freight trains were held up between Jersey City and Philadelphia, but it was not long before the work of the wreckers and snow plows and thousands of snow shovelers began to tell. Many of the laborers, however, suffered intensely, being poorly clad and not prepared to encounter such intense cold. Dozens of ears, hands and feet were frozen but through it all the work was being rapidly and efficiently pushed with the one object in view of getting the road open as soon as possible.

Not one of the small problems confronting the management was the task of feeding for three days 5,000 extra laborers and 2,300 regular men, stretched out over ninety miles of railroad with no means of communication. These men were working against overwhelming odds and could not be expected to make much headway without food. At Philadelphia, the engineer of maintenance of way had charge of the commissary. The restaurant at Broad Street Station, Philadelphia, was kept open all Monday night and more than 60,000 meals were sent out on special trains to feed the men as they found them along the road. The same thing was done on the Jersey City end and commissary trains were sent out as fast as the food could be prepared. In addition to the commissary trains from Philadelphia and Jersey City, track supervisors at Tacony, Trenton, New Brunswick and Jersey City, supplied laborers with food from nearby restaurants. Sandwich and coffee comprised the menu of most of the 100,000 meals the railroads served to its forces between Sunday and Thursday.

When the blockade began the first thought of the railroad officers was naturally the welfare of the passengers in the stalled trains. They had to be made comfortable and fed until the trains could be started. Fortunately many of the marooned trains carried dining cars where the passengers could obtain food. All meals, beyond those regularly served for a train on time, were supplied free. In the neighborhood of New Brunswick there were nearly one thousand passengers to be taken care of, and the activities of the station force at this point, well illustrates some of the unusual things a railroad sometimes has to do to provide for its passengers.

The agent at New Brunswick got in touch with the conductors on the several trains Sunday night and told them to announce through their trains, that if any passenger wished to leave and go to a hotel, the company would be very glad to do anything in its power for their comfort. He also told the conductors that they should serve dinner and luncheon to all passengers irrespective of who they might be.

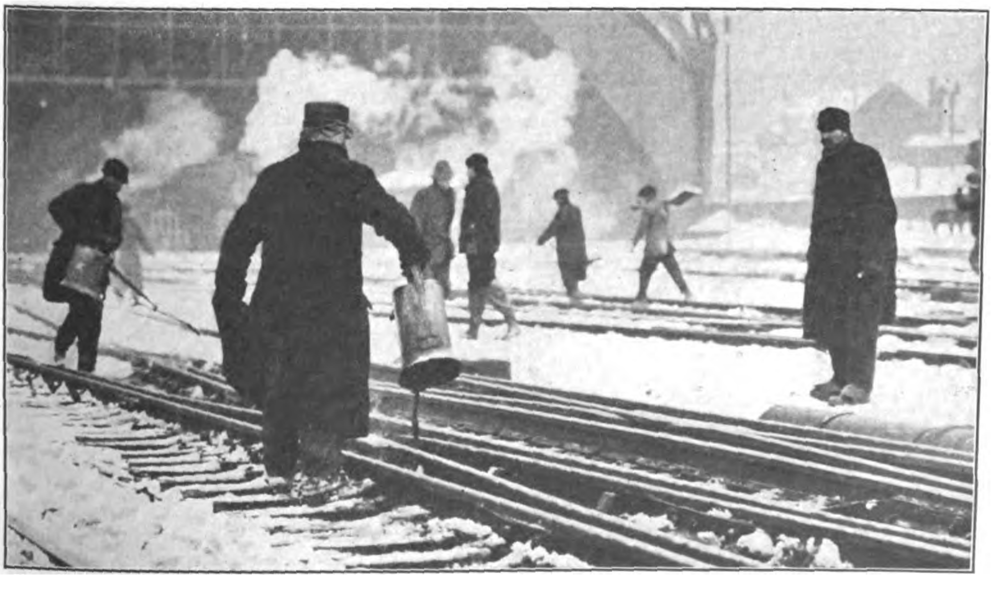
At the New Brunswick station the company aided a great many passengers by sending messages to their families and friends, among them was Thomas J. Marshall, vice-president of the United States. The station force used an extra



THE CONGRESSIONAL LIMITED, ONE OF THE PENNSYLVANIA RAILROAD'S CRACK TRAINS RUNNING BETWEEN WASHINGTON AND NEW YORK, IS HERE SHOWN ARRIVING AT MANHATTAN TRANSFER, FIFTEEN HOURS LATE.

engine and crew from 10.30 Monday morning until 1 P. M. to distribute food to the trains near New Brunswick. They had three miles of trains to cover and they were making sure that no passenger should want for coffee or eatable. They had all passengers fed in an hour.

When the New York-New Orleans Limited and the Sunday evening five o'clock express train from New York to Philadelphia reached Trenton on Monday noon, the passengers were sent to Trenton hotels as guests of the railroad. They remained there until six o'clock, when they went to Philadelphia on Train No. 65 which had worked its way to Trenton in the rear of a snow plow. On the Congressional Limited, one of the westbound trains, the dining car was kept open and many of the passengers formed groups and played cards. The engineers kept steam up so that the cars were warm and comfortable. As indicating the spirit of general good fellowship which



EMPLOYES BURNING PITCH FOR THE PURPOSE OF MELTING ICE BOUND SWITCHES. THIS METHOD IS LARGELY EMPLOYED BY THE PENNSYLVANIA RAILROAD DURING COLD WEATHER IN ORDER TO FREE THE MOVING PARTS FROM ICE.

prevailed, several of the passengers, the following morning, gave their breakfast to the flagmen and other employes who were endeavoring to remove fallen wires from around the train.

At the railroad offices of the Pennsylvania station in New York, a record breaking situation had to be dealt with on Monday morning, and no time was lost in notifying passengers of the actual conditions. Large notices were posted on the gates to tracks on which trains were scheduled to depart, which read:

"The road is tied up as far west as Trenton, and there is no possibility that trains will move to-day. Trains may move this evening, and full announcements will be made well in advance of each departure. Persons having New York hotel or residence addresses are advised to leave their telephone numbers with the station master and return to their homes to wait the departure of trains in comfort."

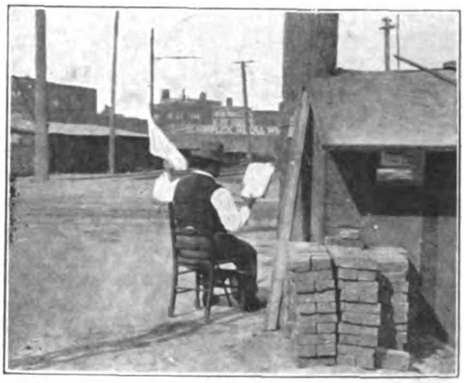
The passenger department arranged to extend the limit of all tickets which, due to the blizzard, could not be used before their time limit expired. Eight hundred people slept in Pullman cars in the station Sunday night. One man woke up believing he was in Pittsburgh. Twenty-five hundred people remained in the trains in the station Sunday night, among them members of twenty-two theatrical companies. The Pullman Company redeemed $600 worth of Pullman tickets Sunday night in New York.

By Monday night all the snow was cleared and the trains started on their way, most of them just twenty-four hours late. It was eight o'clock Monday night before a regular train left either New York or Philadelphia. On Tuesday morning, trains were compelled to run slowly as the dispatchers had great difficulty in getting orders to them, but the blockade by that time had been thoroughly broken and service rapidly improved until it became normal. By Tuesday evening trains were leaving their terminals on time, arriving from an hour to two hours late. By Wednesday morning they were only a few minutes late going over the New York division and by Wednesday night they were on time, in spite of the fact that practically all the regular wires were still out of service. Train dispatchers kept in touch with trains on the road as best they could and gave their orders verbally. Underground long distance telephone wires were used for communicating between New York, Jersey City and Philadelphia. Complete train service was resumed Thursday.

Teaching Railroading by Pictures

THE Pacific Electric Railway Company, of Los Angeles, has inaugurated and adopted a system of illustrated lectures by which the different conditions and problems which confront the employe in his daily tasks are brought before his eyes in the form of pictures, illustrating the manner in which they may be most easily and satisfactorily solved. While the system is comparatively new, the results already obtained are of a most gratifying character. The lectures are well attended and the employes are showing an appreciative interest in the efforts being made to explain the technical and general points liable to confront them in their daily occupations. The pictures, which are of a most practical character, are accompanied by suggestions or explanations by the lecturer, all of which tends to make them more interesting. The success of the idea may be seen when it is stated that since the pictures have been introduced the general attendances have been three and even four times as large as they were formerly.

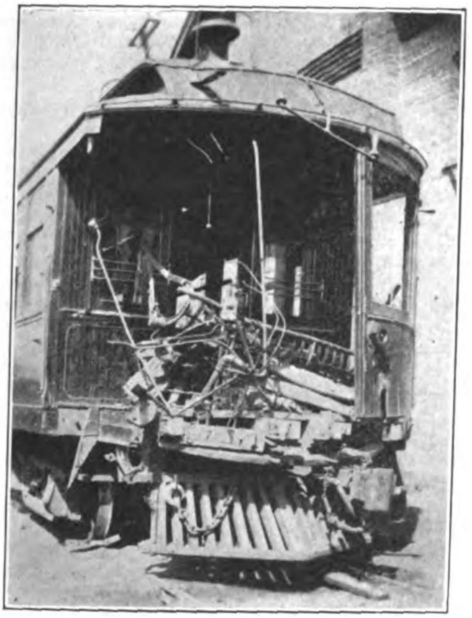
Lecture Room in Which Charts, Moving Pictures, Etc., are Employed to Increase the Interest of the Employe.



Illustrating the Careless Manner in Which Flagmen Sometimes Signal Trains While Reading a Newspaper.

In this illustrated lecture work, both the stereopticon and the moving picture projector are employed.

Many technical points may be satisfactorily illustrated by a single view, the lecturer using a pointer to designate the different features as he proceeds with his narrative. For instance, a picture of a headlight is thrown upon the screen and several minutes will be given by the speaker in explaining the use of each part of this feature, also showing and telling the men what to do in case of trouble with this particular article. By this type of picture is also shown the wrong method of doing certain things connected with the business, these pictures always being followed by illustrations showing the ways in which these things should be done. To illustrate this point we might draw attention to two of the accompanying illustrations. One shows a flag-

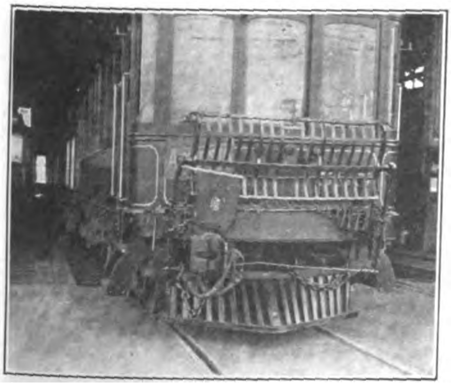


The Damage Shown by This Illustration was the Result of a Disobeyed Order.

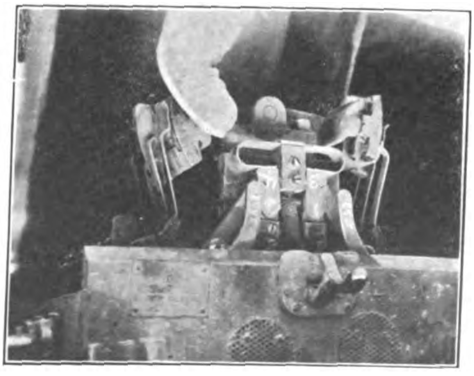
An Unbecoming Attitude Which is Strikingly Shown in the Accompanying Illustration. The Picture Also Serves to Show an Employe Breaking a Rule of the Company by Talking to the Motorman.

man sitting in a chair beside the track flagging an approaching train to proceed ahead, at the same time never removing his attention from the paper which he is reading. Immediately after this slide is shown comes a picture showing how the flagman, before signalling to an oncoming train to proceed, should walk to the middle of the track or in such a position as will enable him to see for a long distance up and down the track, and looking in both directions, before raising the white flag. The other shows how some employes throw the reverser with their feet, this being followed by a picture illustrating how this action, if properly done, is executed by hand.

In these lectures the point emphasized most emphatically is "Safety First." The men are instructed to care first for the safety of the public, next for the property of the company, and later for economy of power. In connection with this "Safety First" idea, both the stereopticon and moving pictures are employed, the "movies" being used where the stereopticon does not entirely "cover the ground." One set of motion pictures shows a high bridge, from the approach of which the structure cannot be seen. A short distance on either side of the bridge is a large "SLOW" sign, this being so conspicuous that it is almost impossible for the motorman to miss seeing it. The first picture shows a train approaching the bridge and when the "SLOW" sign is encountered the motorman heeds the warning and applies the air. Upon starting across the bridge he see that someone, who had started to walk across the structure has been caught in the middle of it. On account of obeying the orders of the "SLOW" sign the driver is able to stop his car without injury to the party caught upon the bridge. Immediately after this picture is run comes a series of motion pictures showing



The Flag System, with Flags Colored, is Thoroughly Explained by the Pictures.



Photograph Showing the Wrong Method of Throwing the Reverser.

a careless driver rushing by the "SLOW" sign without even giving it a glance. His car starts across the bridge and he notices the man in the center. The air is applied but this is unable to overcome the excessive rate of speed at which he had been traveling and the unfortunate man (a dummy being used for this picture) is overtaken and cut to pieces beneath the wheels of the car.

Following a number of these moving pictures showing the violation of the rules and laws of the company, stereopticon pictures showing wrecked cars which are the result of disobedience on the part of the car drivers, and, very often, conductors. At this point figures showing the loss to the company per year through smash-ups of different kinds, caused by non-obeyance of rules, are thrown upon the screen. It is also emphasized that the company cannot afford to retain employes who now and then disregard the rules that have been laid down for them. "If the intention was that these rules and regulations were not to have been recognized and obeyed, they would never have been made."

Another point which is emphasized is that of the appearance of the company's employes while on duty. Many of the men were "snapped" by the photographer during working hours, in positions which were anything but refined. In many instances these men did not realize that their attitudes were anything out of the way, but when shown on the screen these pictures made, these men, and many others, "see themselves as others see them." It is a source of amusement for the men to "jolly" their workingmates who happen to have been unfortunate enough to have been photographed in any awkward position or undignified attitude.

A number of pictures are shown of employes violating rules publicly that have wisely been laid down for the safety of the public and of the company's property, these including talking to motorman, etc. Several pictures show groups of employes, including the conductor of the car upon which the photograph was taken, laughing and joking, during which time passengers upon the car were being neglected.

Throughout these "entertainments" by which term these illustrated lectures have grown to be known, sections of the rules of the company are thrown upon the screen. When a certain part of the work is being described, sections of the rules pertaining to these parts are projected. For instance, when the various flag signals are being illustrated, the rules and laws governing these signals are shown before or after the flag to which it refers. Every section of the work is taken up in connection with these pictures and when certain points are being discussed suggestions and helpful ideas are offered by experienced trainmen as to the best way to meet these unusual happenings or every-day circumstances.

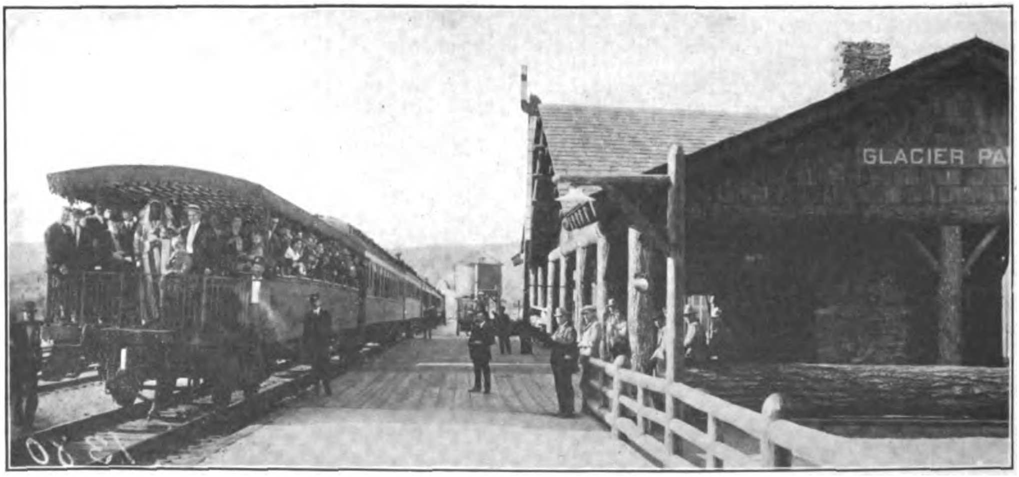
Conducted in conjunction with this illustrated lecture course is a black-board system, in which well-informed instructors "SHOW" rather than "TELL" the recruits and often many of the men older in the service, how certain problems should be handled. This course is complete and quite effective.

There is something like 1,600 men in the employ of this company, and in order that all of the men might have the benefit of these illustrated lectures the various pieces of apparatus necessary for these programs are transported to various points of the company's system, remaining in each district for a stated length of time. So successful has this picture method of instruction become that other railroads are contemplating adopting it, representatives of various roads having already visited Los Angeles for the purpose of investigating its various features.

Opening Up the Glacier National Park in Montana

AUTOMOBILING in Uncle Sam's newest playground—Glacier National Park — not only has opened the way for the most modern mode of travel into America's prettiest mountain scenery but it brings together for unique contrast upon the same scenic highways, the big touring car and Indian travois.

The Blackfeet Indians, who are inseparably identified with the new National Park up in Northwestern Montana, like the automobile as



Oriental Limited at the Glacier National Park Depot.

a curiosity but they prefer to stick to their ponies and use the travois whenever they have any toting to do. Thus the strange meeting of these two widely different types of transportation vehicles upon the roads in Glacier Park furnishes quite an odd spectacle to the summer tourist.

Glacier Park is one of a few of Uncle Sam's playgrounds the automobile has invaded. The "See America First" tourist now may take an automobile ride into the heart of the Switzerland of the New World, as the result of the building of a $100,000 scenic highway by Louis W. Hill, chairman of the Board of Directors of the Great Northern Railway. Before this great roadway was hewed through the mountain and forest fastnesses travel by trail was the only means of penetrating the scenic marvel land which for thousands of years had been the hunting grounds of the Piegan Indians.

This roadway, which Mr. Hill personally helped to lay out, begins at Glacier Park Hotel, Glacier Park Station, Montana—which is regarded as the most unique hostelry in the world. It cost $150,000 and is built of huge cedar and fir logs and has an open camp fire burning in the center of the lobby on chilly evenings. The glow from this camp fire lights the lobby and the three tepees pitched in the lobby as card tooms, together with the rafter and wall Indian decorations form a novel picture for the eastern tourist to gaze upon.

Panama Canal Developments

THE first towing locomotive of the forty ordered for employment on the Panama Canal reached the Isthmus on January 27th, and has been installed on the west side of the center wall at Gatun Locks. Beginning with February 16th, tests of this locomotive have been conducted each week day consisting principally of operating it back and forth along the rack rail, including the inclines. A second machine has been more recently received and four are to be delivered on or about the 15th of each month until all deliveries have been effected. A schedule has been prepared by the First Division for the installation of the locomotives, as follows:

No. of Shipment.	Date.	Destination.	Locomotive. Nos.
1..........	1-15-14	Gatun	641
2..........	2-15-14	Gatun	642 to 644
	2-15-14	Miraflores	681
3..........	3-15-14	Pedro Miguel ...	666 to 669
4..........	4-15-14	Miraflores	682 to 685
5..........	5-15-14	Gatun	645 to 648
6..........	6-15-14	Pedro Miguel ...	670 to 673
7..........	7-15-14	Miraflores	686 to 689
8..........	8-15-14	Gatun	649 to 652
9..........	9-15-14	Miraflores	690 to 693
10..........	10-15-14	Gatun	653 to 656
11..........	11-15-14	Miraflores	694 to 696

The numbers were chosen in the 600 series in the general numbering system of all machines, float wells, transformer room, and other equipment.

The watchman service of the Panama Railroad was reorganized, effective March 1, according to the following general provisions: The position of chief inspector was abolished, and the watchmen were placed under the immediate orders of the company's representatives at the various points. Those at the Panama freight station and in the Panama yard are in charge of the local agent at Panama. The watchmen at the company's piers in Colon have been placed under the receiving and forwarding agent for that port; the guarding of the docks in Cristobal is in charge of the Division of Police and Prisons. This division also took over the patrol of the wharves at Balboa and, as it did several months ago while in temporary charge, assigned to this work nine colored policemen. This provided continuously a gateman and a patrolman on the steel pier and annex, and a patrolman on the new concrete wharf.

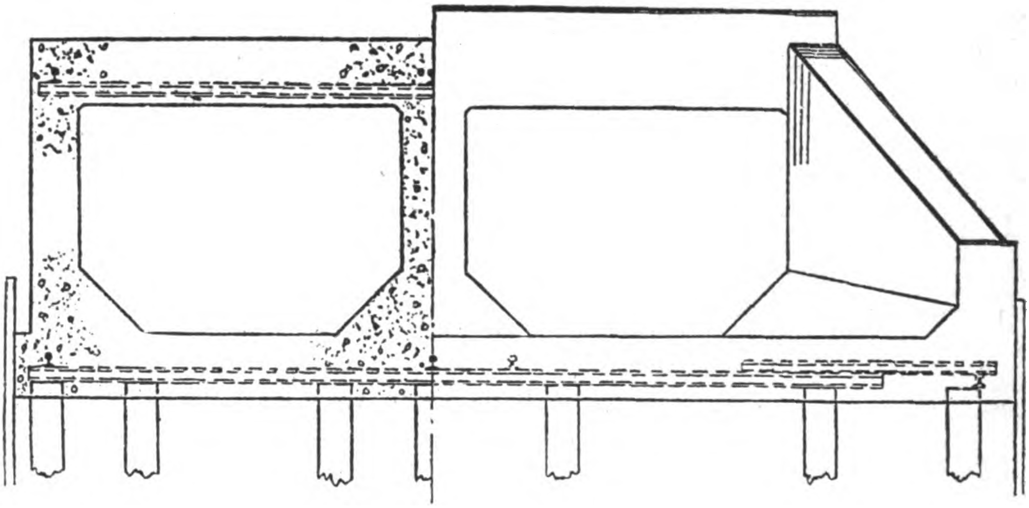
Foundations for the track-span bridges of the high tension transmission line have been installed between Mount Hope and Diablo, and their installation is now advancing south of Diablo, along the right of way of what will be made the permanent main line of the Panama Railroad, running into Balboa. About twenty foundations are yet to be placed. At Corozal, their placing required the moving of two crossovers, the shifting of the spur leading to the commissary building, and throwing the temporary track south of Corozal, known as the sand line, to the west, placing it on a center of 19 feet 6 inches from the southbound main of the Panama Railroad. At Gamboa bridge, across the Chagres River, the placing of foundations is delayed by the work of erecting brackets, which are also to support the highway and foot bridge being erected by the Panama Railroad on the east side of the bridge. Two foundations, caught in small local slides near Radio Station, are being reset.

The erection of the track-span bridges is following closely the completion of foundations. The bridges are in place between Mindi and Pedro Miguel, with the exception of seven at Gamboa bridge, five at Frijoles, and two or three others which cannot be erected at present on account of some local interference.

The one ground wire and three power wires which are suspended on each side of the track, have been strung between Radio Station and Pedro Miguel, with the exception of the gap at the Chagres River. The insulators are placed at about the same time the bridges are erected.

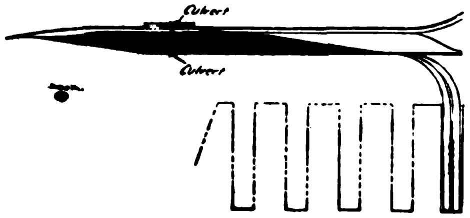
The steel work for the transformer substation at Gatun has been completed and erection of the walls of hollow concrete block has begun. The steel work at the Miraflores substation is practically completed. Filling for the site of the substation at Cristobal, east of Camp Bierd and opposite the proposed Atlantic entrance coaling plant, is in progress and the Panama Railroad is making preparations for driving the piles to support the building. Bed rock beneath this area lies from 35 to 45 feet below sea level, and the station will be supported on about 600 timber piles. Part of the foundation steel has been delivered at the site, in readiness for the beginning of building operations.

The diversion of the main line tracks of the Panama Railroad to serve the new town of Balboa, and the construction of a number of yard tracks in connection with the new pier, have made necessary a suitable crossing over the Curundu River at the point indicated in the attached sketch (A). The Curundu is a small stream that drains



Sketch B—Showing Ends of Openings in Double Box Culvert with one of the Wing Wall Sections.

the meadows lying east of the present Panama Railroad main line, a section of the district of San Miguel in the city of Panama, and the greater part of the swampy area between Ancon and Diablo Hills. Its discharge, except after heavy rains, is insignificant; at the present time it amounts to almost nothing; but it is subject to a tidal flow along its entire winding course through the swamp, and as far back as the railroad crossing above referred to. A part of the swamp has been filled with material pumped by suction dredge in excavating the inner harbor at Balboa, and to avoid blocking the Curundu, while the work is in progress, its channel was deepened, and the earth taken therefrom was used to form levees on each bank.



Showing Culvert Over Curundu River, and Railroad Track Layout in Relation to New Balboa Pier.

The adopted plan for the new crossing of this stream provides for a box culvert, with two openings, which, on account of the numerous tracks to be laid over it, will have a length of 307½ feet, between portals. Each opening will be 10 feet wide, and seven feet high, square at the top, but with the corners cut off at the bottom. The wall between the openings will be two feet thick, the outside walls one and one half feet thick, while the floor and roof will be two feet thick. On each side there will be an apron nine feet wide between wing walls. The entire structure will be of concrete, heavily reinforced, and founded on about 600 piles penetrating to rock. The piles have been driven, and about 100 feet of culvert have already been finished. The floor of the bridge will be at elevation plus three feet above mean sea level, and not much work is required in excavating the pit for it. The ground at this point is very soft, and to prevent caving in during construction and underwashing of the finished structure, the pit (with a width of 25 feet) is entirely enclosed in sheet piling. The culvert is designed to support a wagon road of standard width, two tracks of the Panama Railroad main line, and 16 yard tracks. The tracks and road will cross the culvert at right angles, as shown in Sketch B, and will be placed on a 2½-foot fill of earth to be made over the roof of the structure. This will be the fourth culvert constructed over the Curundu River; one now spans it on the old Corozal wagon road, one on the new Corozal road, and another for the present railroad crossing.

In order to prevent the tidal flow from ascending the river east of the new culvert, automatic tidal gates will be installed at the west end of the bridge, one to cover each opening. These gates will be constructed of 4-inch timber, heavily bolted and braced, to be hinged to the upper edge of the opening. Their operation will be entirely controlled by the tidal rise and fall. When the tide rises above the water level in the swamps, the beginning flow will serve to close the gates against the culvert openings, and when it falls below that level, the accumulation of the natural flow of the stream on the other side of the gates will push them open, allowing the water to escape. This device will prevent the inundation of the low parts of the swamp twice every 24 hours, as now, and will prevent also wearing of the bed of the Curundu by rapid currents caused by the tidal flow.

"The only way to turn away the wrath of an irate passenger is to greet him with a smile. One who works with the traveling public must remember that many of the patrons of a railroad often are under a nervous strain. Some are going to the funerals of a father or mother, and others are answering disagreeable calls. The passenger ALWAYS should get the benefit of a doubt. It is seldom you see one a second time and he should carry away a pleasant remembrance of the city and the railroad company."—Calvin Dutton.

Recent British Railway Developments

(From our London Correspondent.)

Britain Buying Locomotives.

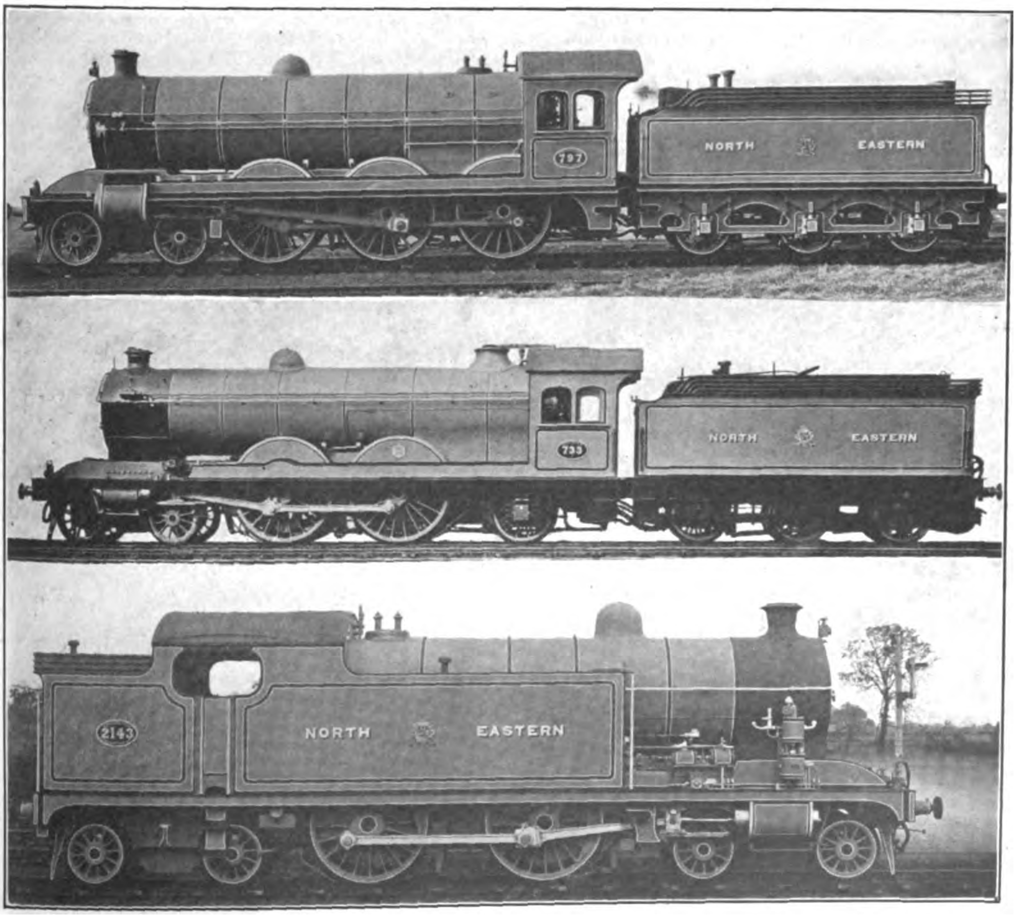
BRITISH railway boards are apparently eager at the moment to follow foreign methods. Close on the heels of the Great Eastern's appointment of an American as general manager comes a report that the South-Eastern and Chatham are going to Germany for locomotives.

I am informed from an authoritative source that the directors of the South-Eastern and Chatham Railway, with a view to providing more adequate locomotive power for the working of their continental boat express traffic, have just recently placed a contract for ten powerful locomotives with A. Borsig, a well known German locomotive building firm, whose works are at Tegel, near Berlin. Although, some nine years ago, the Great Central, Great Northern, and Midland companies introduced a number of goods locomotives which had been built at the Schenectady works of the American Locomotive Company and at the Baldwin works, Philadelphia, and the Great Western Company introduced into their Paddington and Plymouth express service an experimental de Glehn locomotive, built in France, no German-built locomotives have ever been imported into Great Britain with the exception of small narrow-gauge engines for contractors' purposes.

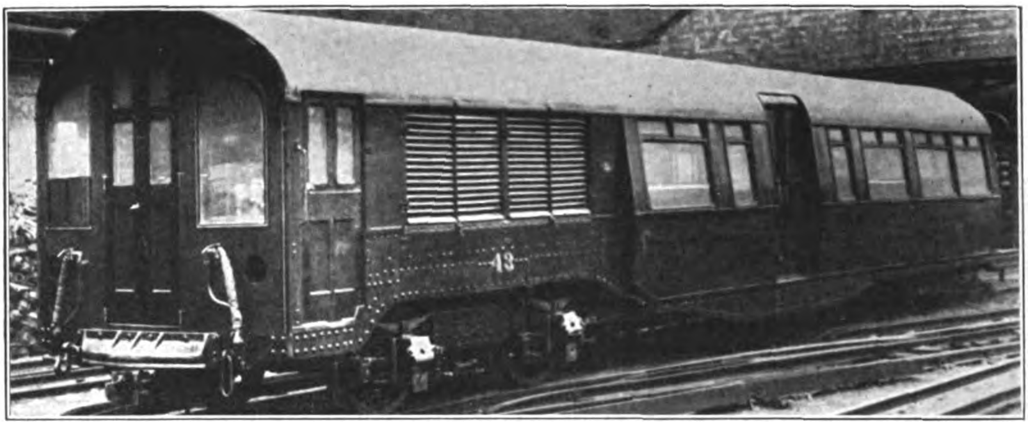
In explanation of the placing of this order in Germany, it is stated, that owing to the present prosperity of the British locomotive and railway rolling stock industry, sufficiently early delivery could not be guaranteed by leading builders in this country quite apart from the more favorable price quoted by the German builders. The South-Eastern and Chatham Company in order to meet immediate requirements, have lately obtained on loan from the Great Northern Railway Company the use of fifteen four-wheeled coupled bogie locomotives, several of which have already been put to service on the South-Eastern and Chatham line.

New Locomotives.

The accompanying illustrations are of three of the newer North-Eastern locomotives. In one of these the Stumpf cylinder arrangement on the uniflow principle has been applied.



RECENT TYPES OF LOCOMOTIVES PURCHASED BY THE NORTHEASTERN RAILWAY OF ENGLAND.



New All-Steel Car for London Underground Railway.

New Steel Middle Door Carriages for London Underground Railways.

THE underground or tube railways of London are being continually improved and one line of development concerns the rolling stock. Even the old cars and motors on these lines were ahead of the rest of the country and the progress is being continued with all fresh stock.

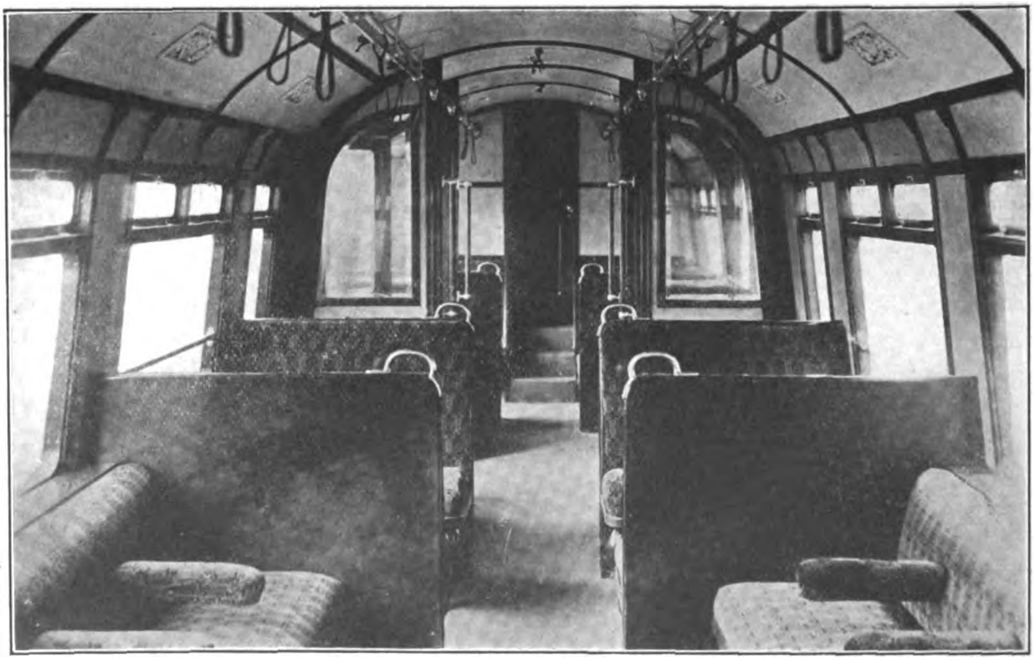
At the beginning of February new all-steel cars were introduced, including many improvements. For one thing middle doors have been installed in addition to the end entrances and exits. These middle doors are double hinged and open inwards. They are operated by the passengers and close automatically.

Electrically controlled locks are fitted to the doors so that the gateman on the end platform can lock and unlock the doors. The operating switches are connected with the levers which open and close the ordinary gates at the end platform of car. Small red and green lamps are fitted at the end platform so that the gateman may see that the doors are locked before starting the train. Experimental cars fitted with middle doors have been running on the Piccadilly line for some time and have been found very useful for dealing with very heavy traffic.

The new cars are arranged with arch roofs, in place of the clerestory roof, to increase the interior air space and facilitate the fitting of middle doors.

The seats and backs are constructed of woven wire and are upholstered in moquette velvet and fitted with arm rests projecting from the seat backs.

Sanitary fireproof composition is used as flooring in place of wooden slats.



Interior of New All-Steel Car for London Underground Railway.

The cars are equipped with emergency electric lighting supplied from accumulators. Emergency lights are automatically switched on in the event of failure of the ordinary supply current.

The cars are constructed entirely of steel and other metals except for a small portion of wood which has been rendered fire-resisting.

The electrical equipment is of improved design and the cars are mounted on bogies specially designed to give smooth running and reduce noise.

The new cars will be fitted with white enamelled steel covers on the hand straps.

Hitherto the carriages used on all the London tube railways have only had two doors (in the end motor coaches only one means of entrance and exit is provided for the use of the public) but as will be seen the new cars built for the London Electric Railway (which is the official title of the combined underground and tube railways) are equipped with a third door in the center of the vehicle. This may be regarded as putting an end to a controversy that began with the electrification of the Metropolitan and District Railways. With the exception of the motor coaches, the vehicles used for the District's electric service have been of the three-door type from the outset, while the others dispensed with the center door. Both types of vehicle have their partisans. The car with three doors can discharge outgoing passengers and receive new ones in shorter time, and as the duration of the station stops is a very important factor in determining the speed and frequency of the underground train services, this is a very great advantage. But, on the other hand, the provision of an extra door means a reduction in seating accommodation so far as open cars are concerned, and as the accommodation is never quite enough during the rush hours this is a decided drawback. It seems, however, to have been discovered in practice that the operating advantages of the three-door car outweigh its drawbacks. It will be seen that this development also follows upon tests undertaken on the New York "subway," which I understand show the provision of doors at the middle as well as at each end to be desirable. It does not appear likely that any more coaches without central doors will be built for the London underground railways.

No fewer than five types of central door cars have been experimented with in an endeavor to find a type which would meet traffic conditions on the London tube railways. It is understood that the type of car which has now been evolved shall form the future train unit of tube railways. Some interesting calculations have been made as to the advantage of the central and end door car over the end door type. It was found that if only ten passengers per car had to be handled there was an actual loss of time in the use of the central door owing to the extra work thrown on the conductor. With fifteen passengers entering and alighting the time was the same as with the old type of car. From that point onwards conditions were in favor of the new type, and when forty passengers were being handled the economy in time saved on stops at stations against the old type of car was 38 per cent.

The companies are also eliminating the inflammable element in the coaches.

In recent years great attention has been given to the question of fireproofing, with the result that not only is the woodwork being rendered fire proof, but every year marks a closer advance to the ideal of the "all-steel' coach. On the London Electric Railway steel construction is already used on about 480 vehicles, and there are some eighty of similar construction running on the District Railway. The Central London, which was a pioneer in this direction, has some steel cars on order for use on its Ealing extension, and the carriages which will be used for working on the through London and North-Western Bakerloo service on the opening of the extension from Paddington to Queen's Park will also be of steel.

Porcelain straps for strap-hangers, center swing doors, and more cross-seats are among the improvements in the new cars which are running on the Bakerloo Tube Railway. This railway is one of the half dozen tube lines that are operated under the general title of Underground Railways of London. J. P. Thomas, superintendent of the Underground railways, speaking to your correspondent said that the new straps will be hygienic as they can be washed. Twin-doors in the center of the carriages will open inwards, requiring but a gentle pull from the passenger. When the train starts these doors will be secured automatically. An electric bolt will fasten them at the moment the conductor on the platform between the carriages closes his gates. The doors will be connected electrically with pilot lamps on the conductor's platform and in the driver's cab. These lamps will go out when the doors open and light up when they shut, thus assisting drivers and conductors in their control of the train. At present there are no center doors in any of the tube trains with the exception of an experimental train running on the Piccadilly tube. Other improvements are:

1. Less stuffy carriages. A continuous flow of fresh air will be forced in from ducts connected with a special chamber. The roofs are arched, thus giving more air space.

2. Better lighting. The lamps will be placed at an angle so that the glare will not shine in the eyes of a passenger looking across the carriage.

3. More cross-seats. All seats will have arms and be covered with the material known as moquet—more comfortable-looking than rattan cane seats.

4. Improved springs in the trucks will secure easier running.

5. The cars will be all-steel with the exception of the window sashes and the floors, which are non-inflammable.

Electric Lighting for Trains.

THIS is a subject which has recently been discussed at some length in the British newspaper press. Our railways have been slow in adopting electric lighting for their passenger trains, not for the reason that it was unsatisfactory as a means of illumination or that there was no reliable system available, but rather on account of the comparatively high capital expenditure that would be required. When electric lighting was introduced commercially the majority of trains were lighted by compressed oil gas, except in some few instances where oil lamps were still employed. At that time, according to T. Ferguson, who read a paper on train lighting before the British Institute of Electrical Engineers, the gas-lighting plant installed represented a very large capital invested in gas-manufacturing plants, compressors, and traveling gas tanks, as well as storage cylinders and rolling stock equipment.

The author of the paper considered that the cheapest form of train lighting would be the installation of high-speed steam-driven generators on the engines, with suitable flexible cable connections from locomotive to carriages, the latter being wired in the usual way. To some extent, as readers of the RAILWAY WORLD will be aware, this system is already used in America, and it has been found to be the cheapest in first cost and subsequent maintenance. It has, however, certain inconveniences which need not be dwelt on at length, chief of which is that the locomotives have to remain attached to their trains longer than would be otherwise necessary. The individual unit as already used on many of our British lines, is particularly well adapted to the requirements of the railways, as each coach so equipped is an independent unit and can be run anywhere on the railway, no storage tanks being necessary.

Superheated Steam.

A SAVING in coal consumption of no less than 30 per cent is stated to have been recorded by the Midland Railway in comparative tests between a locomotive fitted with a superheater and one of similar design less the superheater. Another comparison of consumption per ton mile shows an average saving of 23 per cent in coal and 22 per cent in the quantity of water used.

These interesting results were given by Henry Fowler to the British Institution of Civil Engineers in a paper setting forth the advantages of and difficulties encountered in the use of superheated steam in locomotives. The utilization of steam superheated, said Mr. Fowler, has engaged the attention of engineers since the middle of the eighteenth century. Its application in locomotives was suggested over 85 years ago, and for half a century many attempts were made to employ it in this class of engine, but owing to trouble arising from the packing and the lubrication these were not successful.

The type of superheater now in most general use is that in which the steam receives its superheat when passing through small tubes placed in large smoke tubes through which the heated gases travel on their way from the firebox to the chimney. This type is general in this country, where, in addition to the Schmidt system, the Swindon and Robinson systems, which differ from the Schmidt in detail only are also employed. The utilization of the heat in smoke-box gases has been tried repeatedly but without much practical success.

Under ordinary conditions, when an engine is running the steam passing through the superheating elements carries away with it sufficient heat to keep the metal of the elements comparatively cool. When, however, a locomotive is running down an incline without steam this does not occur, and it becomes necessary to prevent the gases from passing through the fire tubes. This is effected by a damper or some other type of retarder. Arrangements are generally made for working the dampers or retarders automatically.

The greater volume of superheated steam, when compared with saturated, has in many cases led to the adoption of larger cylinders and lower boiler pressure. This leads to economy in boiler repairs, which may counterbalance the increase of maintenance necessary for the extra apparatus required when superheated steam is used. The degree of superheat usually employed is 230 degrees to 260 degrees F. No figures at present seem to be available for the variation in the economy with varying degrees of superheat.

Experiments have been carried out to ascertain the effect of superheating the steam supplied to the high pressure cylinder of a three-cylinder compound locomotive and it has been found that a saving of coal of 25.9 per cent and of water of 22.3 per cent has resulted when comparison is made with a similar engine using saturated steam. In tests carried out with goods engines the coal saving has been from 14.3 per cent to 18 per cent.

Piston valves are in this country used almost exclusively in locomotives using superheated steam. These have to be of special design, owing to the greater fluidity of superheated steam and to the difficulty of efficiently lubricating any surface to which highly superheated steam has access and which has a heavily loaded machine part passing over it. For the same reasons special attention has to be paid to the design of the piston head.

Steel Sleepers for India.

THE Secretary of State for India is now inviting tenders in England for the supply of steel sleepers, which indicates that the age of the steel sleeper is commencing in India. For some time past the price of wooden sleepers has been advancing with alarming rapidity, and even at the enhanced prices the railways have great difficulty in fulfilling their requirements of sleepers. The Forest Department of Burma, it appears, has supplied large quantities of pyngadu sleepers, but the price for these rose so rapidly that the railways had to look to other sources for their requirements, and large quantities of sleepers of the kind called Jharrah were imported into India for supply to railways. The price of these is also steadily rising. Deodar, sal, and other kinds of timber are also used for sleepers, but the demand is greatly in excess of the supply, and they are readily bought up as soon as they come on the market.

Forced Employment of Superfluous Men.

ONE of the unfavorable features in the railway situation is the forced employment of superfluous men. This fact should not be confused with that of wage advances. Wage advances are not an unmixed evil; superfluous men on railways are. Demoralization, with resultant poorer service to the public, form the evil of idlers, especially in railways, is an obvious fact.

"The public is hurt when non-essential men are kept on, and essential men, necessary for the better conduct of the business, are laid off. This is unfair at the start, and will in the end lower the efficiency of railways. Pressure of public opinion, exerted through its chosen representatives, presents the only way in which it can be remedied."—T. D. Underwood, President, Erie R. R.

Financial

The Outlook.

MARCH showed no well defined trend in either the business or the financial situation, although the latest railway returns have naturally given cause for the gravest apprehension. Net results, in a great many cases, are so unsatisfactory, that unless a sharp turn for the better occurs, a number of important roads will soon be in serious financial difficulties. Figures compiled by the Bureau of Railway News and Statistics for the six months ending December 31, 1913, show that while the gross returns from business done during this period were $10,000,000 greater than for the corresponding six months of the previous fiscal year, expenses increased $68,000,000 causing a loss in net operating revenues for the first half of the current fiscal year of $58,000,000. Later figures by the Bureau of Railway Economics for the month of January of the present calendar year, which we publish elsewhere, show even a worse state of affairs.

Under such conditions, the forthcoming decision of the Interstate Commerce Commission with reference to the proposed increase of five per cent in Eastern Territory is of paramount importance. Should this decision prove favorable, it is anticipated that it will at once stimulate railroad buying, and will have an encouraging effect upon general business. Even the most radical of legislators now recognizes the fact that the situation has become extremely serious, and the pendulum of public opinion is at last swinging definitely in the direction of fair play for the carriers and the imperative necessity of not delaying a decision in the rate case longer. There also appears to be a gleam of hope, a growing appreciation on the part of our citizens as to how closely our business future is dependent upon the prosperity of the railways. It would be foolish, however, to overlook the fact that the railroads have been severely crippled by the dilatory tactics of regulative authorities and that whatever action may be taken by the Commission, it will mean a long, hard pull before normal conditions can be restored.

The financial markets during March showed a noticeable absence of anything approaching liquidation, although the general tenor of public opinion seemed to be in the direction of awaiting some definite action in the political and business situation before undertaking anything of importance in the way of commitments. While general business continued under approximately the same scale as in January and February, practically all transactions were marked by a feeling of hesitation and insecurity which made hand to mouth buying the prevailing method of transactions for the month.

At Washington, the boiling point has about been reached, owing to the Mexican and Panama Canal toll questions. President Wilson has won the initial battle for the repudiation of the plank of the Democratic platform which called for the free passage of American vessels through that waterway, but the end is not yet, and lively times may be confidently anticipated for the next few weeks. The Mexican situation drags along in a most deplorable and discouraging manner and the President is being freely criticised for his lack of definite action. This, of course, adds to the unfavorable influences which are affecting business. On the other hand, fundamental conditions are not without their offer of better times to come. The mild winter and early spring give promise of bountiful crops and the country's tremendous natural resources are only waiting for that stimulus, which accompanies a feeling of restored confidence, to again flow, in gigantic volume, into the markets of the world.

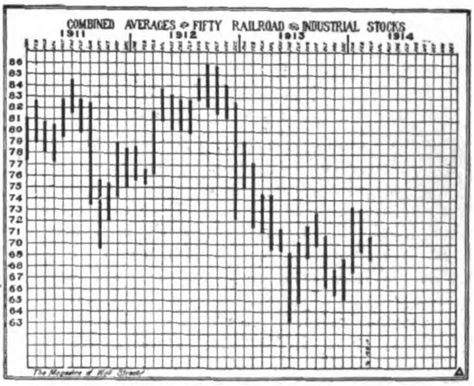
It is this lack of confidence, caused by the apparent inability of those in authority to deal with the great business enterprises of the country on a business basis, that is responsible for the present stagnation and uncertainty. It should not be overlooked, however, that the consuming public have been buying very sparingly within recent months and that economy has been the watch-word in practically every section of the Nation. Money is in abundant supply and it would appear that even a partial restoration of confidence in the ability of the authorities at Washington to deal with business in an intelligent and fair manner, should have an immediate and stimulating effect.

Spencer, Trask and Company, in discussing in their monthly letter the present condition of the security markets and the probable outlook, has the following in part to say:

"The situation in the security markets has been somewhat perplexing, but, generally speaking, the trend has been, with few exceptions, in an upward direction. Specific instances like the Rock Island situation, the heavy assessment upon the stock of the Wabash Railroad Company incident to its re-organization, and the prospect of suspension of dividends by other railroad corporations, have had their effect primarily on the securities directly affected, but the more seasoned and better grade of railroad stocks have held the improvement previously made during the year, and there has been little or no selling pressure from any quarter whatsoever. New offerings of securities have been of less volume than anticipated, largely because of the feeling that it was not wise to put them out under existing conditions, and the relatively small amounts issued, if made by corporations of standing and prominence, have met, as a usual thing, with comparatively ready sale. There is an abundance of money awaiting investment in the country, and while at the present time it is being used in the direction of high grade and seasoned securities, it undoubtedly would be available in larger quantities for new securities if assurance of a definite trend in the way of improvement could once be indicated.

"The bond market has shown little or no change from the previous month, with the exception that some new issues have not maintained the advance previously made. The floating supply of old line bonds has been very materially reduced, and the attention of conservative investors has necessarily been diverted to some extent at least, in the direction of public service corporation issues of seasoned standing and unquestioned earning capacity. The demand for municipal bonds has been of less volume than during the first two months of the year, largely because of the fact that the requirements incident to the Federal Income Tax Law have been very largely met; at the same time the present selling prices show such a small income return as to warrant investors in disregarding the income tax feature and reinvesting in securities that do not possess this element of investment attractiveness.

"The prospects for the immediate future, therefore, are contingent largely upon the consummation of factors previously referred to, particularly the final disposition of the railroad rate cases. Until something definite of this kind is indicated, there would seem to be little, if any, probability of a marked change in any direction. Given, however, a favorable and immediate decision on the rate question, security markets and general business may confidently be expected to change rapidly for the better."



Railway Revenues and Expenses for January.

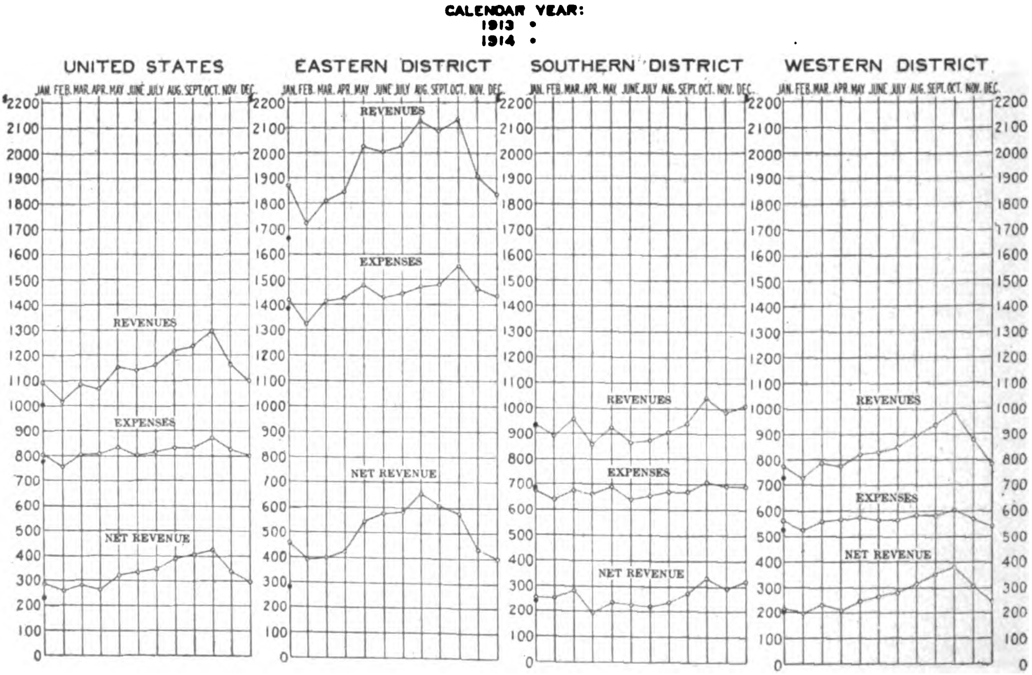
THE latest Bulletin of the Bureau of Railway Economics of Washington, D. C., shows a decrease in total operating revenues for January, 1914, as compared with the same month in 1913, of 7.5 per cent per mile, and a decrease in operating expenses of 3.3 per cent per mile. Net operating revenue per mile was less by $56 or 19.5 per cent than for January, 1913, while that for January, 1913, was 40 per cent greater than for January, 1912.

Railways operating 225,510 miles of line are covered by this summary, or about 90 per cent of all steam railway mileage in the United States. Their operating revenues for the month of January, 1914, amounted to $226,618,120. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with January, 1913, total operating revenues show a decrease of $16,457,067. Total operating revenues per mile of line averaged $1,005 in January, 1914, and $1,087 in January, 1913, a decrease of $82, or 7.5 per cent. There were decreases of 9.9 per cent in freight revenue per mile and of 1.2 per cent in passenger revenue per mile.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $175,067,091. This was $4,464,388 less than for January, 1913. These operating

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES OF $1,000,000 OR OVER



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

expenses per mile of line averaged $776 in January, 1914, and $803 in January, 1913, a decrease of $26 per mile, or 3.3 per cent.

Net operating revenue, that is, total operating revenues less operating expenses, amounted to $51,551,029, which was $11,992,679 less than for January, 1913. Net operating revenue per mile of line averaged $229 in January, 1914, and $284 in January, 1913, a decrease of $56 per mile, or 19.5 per cent.

Taxes for the month of January amounted to $11,178,828 or $50 per mile, an increase of 10.2 per cent over January, 1913.

Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $177 per mile of line and in January, 1913, $238, thus decreasing $61, or 25.6 per cent. Operating income for each mile of line for each day in January averaged $5.71 and for January, 1913, $7.61. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

The operating ratio for January, that is, the per cent of total operating revenues absorbed in operating expenses, was 77.3 per cent, which is comparable with 73.9 per cent in January, 1913, and 78.2 per cent in January, 1912.

Colorado and Southern Passes Dividend on Preferred Stock.

THE Colorado and Southern Railway Company has been forced, owing to unsatisfactory financial results, to pass the dividend on its preferred stock, due April 1, 1914. In taking this action, the following letter has been addressed to the holders of this stock:

March 30th, 1914.

To the Preferred Stockholders:

It is with great regret that the management of the Company is compelled to announce to the holders of its Preferred Stock, that its financial condition will not justify the payment of a dividend on April 1st, 1914.

This condition has been brought about by the strike of the Colorado coal miners declared in the early Fall of 1913 and the serious shortage in the cotton and other crops on the Texas lines of the Company.

Every effort has been made to restrict operating and maintenance expenses as far as prudence would permit, but as a result of these conditions the operating income of the Colorado and Southern Railway Company for the seven months ended January 31st, 1914, shows a decrease of $432,908 as compared with the previous year, and a corresponding reduction of $915,266 in the operating income of the Colorado and Southern System Lines for the same period.

The revival of general business in the territory served by the Colorado and Southern will depend largely upon the outcome of the next crop season.

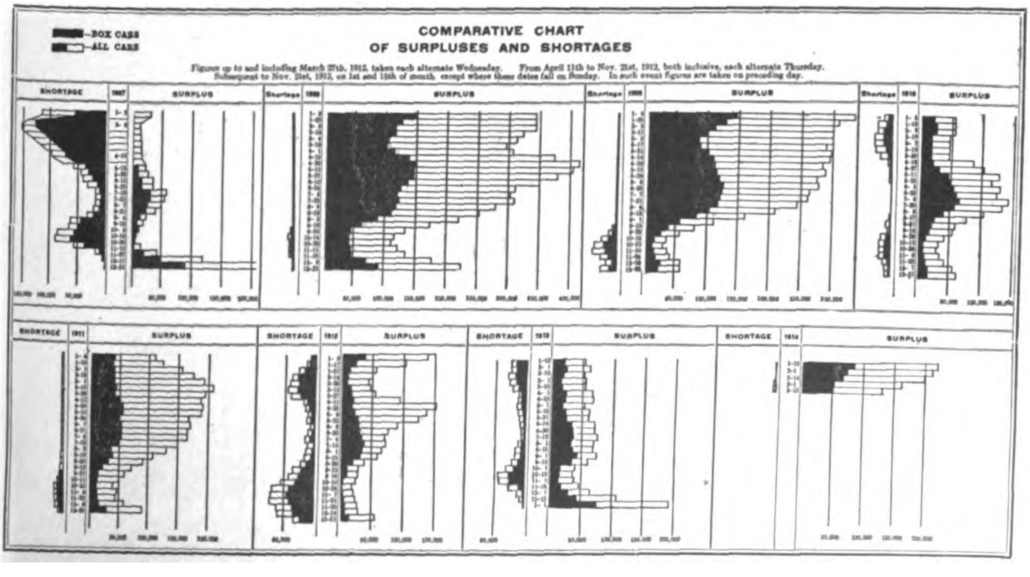
In view of this serious shortage in revenue and the uncertain prospects for the immediate future, we think the stockholders will agree that it would be unwise for the Company to make any dividend payments at this time.

The Colorado & Southern Railway Co.,
By Darius Miller,
President.

Operation

Statement of Car Surplusses and Shortages.

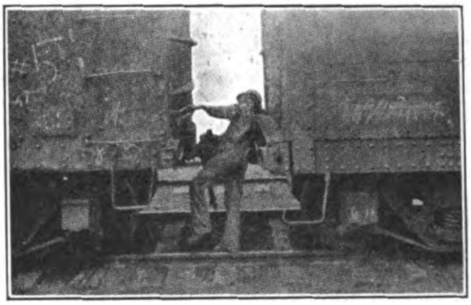
THE latest report of the American Railway Association on the car situation continues to show a large increase in the number of idle cars over the number on a corresponding date last year. The total surplus on March 15, 1914, was 132,010 cars compared with 57,998 on March 15, 1913. The shortages on similar dates were 7,145 on March 15th of the current year and



20,223 on March 10th of last year. The following diagram shows the surplusses and shortages on specified monthly dates for a series of years.

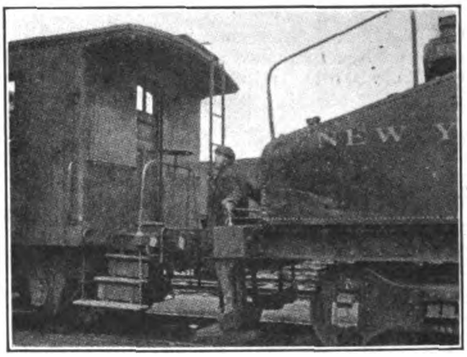
New York Central Safety Exhibit.

THE accompanying photograph gives some idea of the elaborate exhibit of the New York Central Lines on the occasion of the recent International Exposition of Safety and Sanitation held at the Grand Central Palace, New York City, in December. This exhibit occupied 416 square feet of space. A frame one foot wide and twenty-five feet in length contained thirty-four illuminated transparencies of scenes along the New York Central Lines. These were made by Japanese hand-colored artists and the coloring was of unusual beauty and richness. On a table just underneath them, was a most complete set of models showing safety guards as applied to machines. These little models were perfectly constructed and formed a most instructive exhibit. On the east side of the booth was a table containing pictures of unsafe practices and showing the safe and unsafe way of performing work by railroad men. On the same table were a number of pictures illustrating the trespass evil and pointing out graphically the class of trespassers most commonly found on railroads. Another table contained a neatly contrived stand holding illuminated lantern slides which illustrated unsafe practices used by the Safety Department for the education of employes. On a shelf above the beautiful transparent views, was a model of a New York Central Line box car equipped with all the proper safety appliances. This exhibit, taken as a whole, was considered so artistic, complete and instructive, as to merit a grand prize, which was accordingly awarded by the Exposition officers.

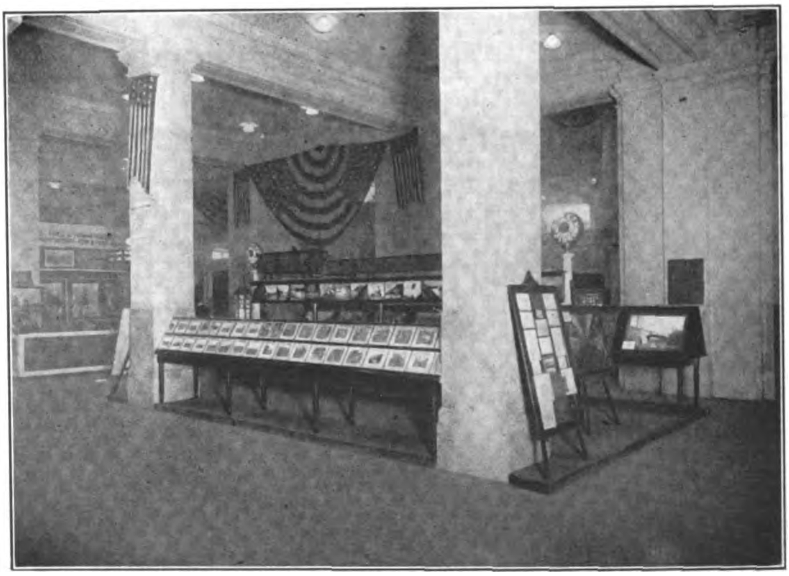


INDULGING IN THIS PRACTICE HAS COST HUNDREDS OF LIVES.

The February issue of the New York Central Lines' little safety magazine calls attention to the fact that that issue represents the first anniversary of the publication of the magazine which has appeared quarterly during the past year. There are 80,000 copies printed each issue and distributed to



A NUMBER OF MEN HAVE BEEN KILLED RIDING ON THE FOOT BOARD OF AN ENGINE WHEN A HARD COUPLING SHOVED THE DRAW HEADS IN.



VIEW OF NEW YORK CENTRAL LINES EXHIBIT AT GRAND CENTRAL PALACE, NEW YORK, DECEMBER 11-20, 1913.

the New York Central Lines English speaking employes. It has been the object of the editor to keep within its covers, pictures and reading matter of educational value to the men of all branches of the railway service. An effort has been made to point out plainly many of the causes of accidents that result in injury to employes of the railroad companies and others on their premises.

The current issue contains, as usual, a number of photographs illustrating how chances are being taken which often result in fatal accidents. The accompanying illustrations are fair examples of those which appear in the February issue.

Passenger Accidents Through Personal Negligence.

IT would be surprising to many individuals who have inaccurately reached the conclusion that whenever a passenger is injured or killed, the fault must rest with the railroad, to learn how many accidents occur to passengers which are entirely the result of their own carelessness. For example, seven hundred and twenty-one accidents to passengers of this kind occurred on the enn-sylvania Railroad last year, due entirely either to the carelessness of the passengers themselves or to a disregard of the rules of the company. As showing the great care with which railway operations are conducted, it is a highly significant fact that while no passengers were killed on the Pennsylvania Railroad in a train accident during 1913, seventeen were killed on the property of this company as a result of their own fault. Seven of these killed, either fell, jumped or stepped from moving trains, while four jumped from ferry boats. The other cases of death were due to the following causes: Attempting to board a moving train, jumping through coach window, stepping from train into canal feeder, stepping off station platform in front of train, being struck by train after alighting from another train, child and woman being struck by a train in an effort made by woman to rescue child who had started across tracks.

Passengers on trains have often objected to the requests of trainmen not to allow luggage to remain in the aisles of coaches, but the necessity for this rule is apparent when it is stated that the Pennsylvania Railroad alone last year, paid out $5,143 on account of accidents to passengers who tripped over other passenger's grips placed in the aisles.

Railroad Employes as Fire Fighters.

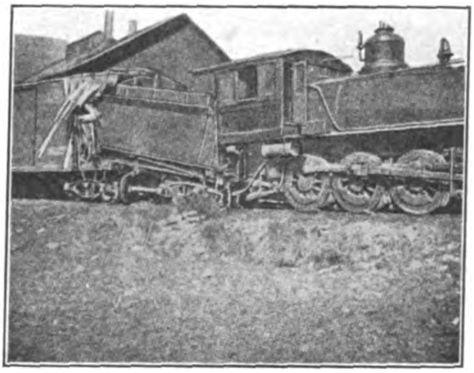
LAST year 823 fires occurred on the property of the Pennsylvania Railroad System; this was the smallest number of fires in a year since 1904. The fire loss for the year was $271,288, the smallest, with the exception of one year, in the past 35 years.

As showing a steady improvement in efficiency, in 1908 the company's employes extinguished 274 fires out of a total of 1,397 which occurred on railroad property.

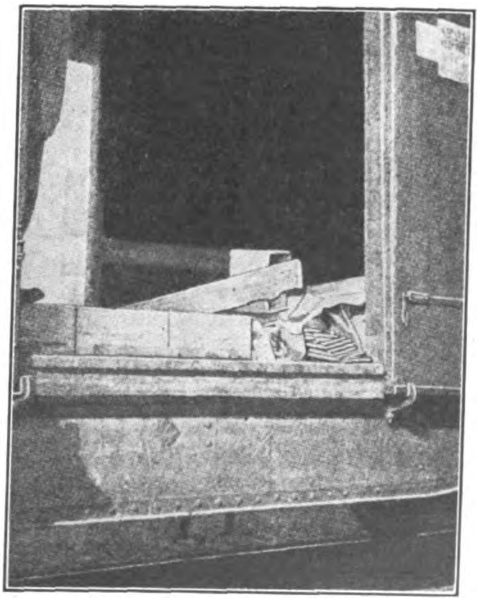
The railroad has issued a circular giving the causes of all fires on the System in 1913, in order that employes may realize that their efforts to minimize losses from fire are effective and are appreciated.

Report of the Chief Inspector of the Bureau of Explosives.

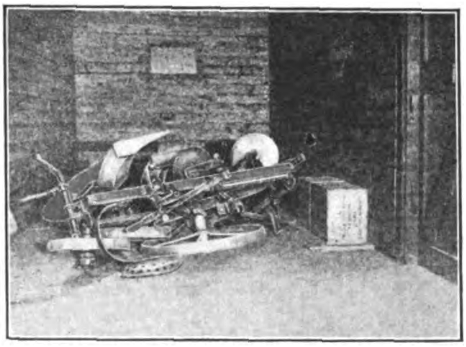
COLONEL W. B. DUNN, chief inspector of the Bureau of Explosives, has issued his report for the calendar year 1913. The report constitutes a thorough and comprehensive review of the work of this valuable organization during the past twelve months and contains a statistical record of all accidents which occurred during the year rightfully coming under the jurisdiction of the Bureau, including the property loss involved and the number of persons injured and killed. In the transportation of articles named in the list of dangerous articles, the report shows that there were two hundred and sixteen accidents, representing a property loss of $5,282, accompanied by the injury of twenty persons and the death of one. The fires which occurred in the transportation of articles named in the list of



A NARROW ESCAPE. THIS CAR OF EXPLOSIVES WAS BEING HANDLED NEXT TO ENGINE IN VIOLATION OF THE INTERSTATE COMMERCE COMMISSION'S REGULATIONS.



A "NEAR ACCIDENT" TO CAR CONTAINING 23,000 POUNDS OF HIGH EXPLOSIVES. CONDITION DISCLOSED, CAUSED BY ROUGH HANDLING.



A Gang Plow Loaded Near Two Boxes of High Explosives. The Conditions are Favorable for an Explosion and the Position of the Boxes in Direct Violation of the Interstate Commerce Commission's Regulation.

dangerous articles involved a property loss of $276,000, and injury to sixteen persons. The accidents in the transportation of explosives resulting either in explosion or fires involved a property loss of $22,000 and caused the injury of four persons.

In discussing the results of the year's work, Colonel Dunn has the following in part to say:

"When this work was started in 1907 the only object in view was to promote safety in the transportation of explosives. Safety in the transportation of dangerous articles other than explosives was not considered at that time. In the year 1907, 79 accidents occurred in connection with shipments of explosives in transit and on carriers' property awaiting delivery to consignees; 52 persons were killed and 80 injured as a result of these accidents. The total property loss reported was $496,820 and it is known that this did not include all losses, since many suits for damages were unsettled at the time the reports were rendered.

"During the year 1913 no life was lost and only 4 slight personal injuries occurred in connection with the transportation of explosives by railway common carriers in the United States and Canada. The total property loss was $22,048.50. Of this total it is proper to consider $4,048.50 as the actual loss resulting from violation of the regulations properly chargeable to shippers and carriers. An item of $18,000 in the total loss was caused by an explosion and fire which our investigation indicates was due to the criminal act of a railway employe, whose object was to collect an accident insurance policy.

"Of the 4 persons slightly injured 3 were injured by the explosion of small quantities of black powder or small arms ammunition concealed by shippers in baggage or household goods. The remaining injury was received while fighting a fire that reached a car containing a shipment of 32 cases of dynamite, and resulted in the explosion of this material.

"The most serious accident for which carelessness of the carrier can be charged is that of the explosion of 32 cases of dynamite in a car which was stored in a yard in such a position as to be subject to fire risk. The negligence in this case was indirect, however, since the fire was caused by live sparks blown by a high wind into a pile of lumber which happened to be near the car.

"It cannot be denied that the work of this Bureau is a prime factor in the enforcement of the regulations and that to the degree of enforcement attained is due the difference in loss of life and property, between the records cited for the years 1907 and 1913."

Growth of Sanitation on Northwestern System.

SOMEWHAT over a year ago the Chicago and North-Western inaugurated a system of sanitation inspection on its lines under the supervision of Dr. C. G. Elmore. At the start, Dr. Elmore confined his efforts to the inspection of equipment arriving at and leaving from the new passenger terminal at Chicago. His field has been so rapidly enlarged, however, that to-day the Chicago Passenger Terminal itself as well as all parlor cars, buffet cars, dining cars, chair cars, coaches, baggage cars, station and employes' quarters, and such places as round houses, shops, etc., over the entire system, come under his direct supervision. In this work Dr. Elmore has the co-

Inspecting Fish Racks and Dining Car Kitchens on Chicago North Western Road.

operation of the vast army of Chicago and North-Western employes, who are making it their duty to report any unsatisfactory conditions they find in their particular localities.

As an indication of the magnitude of this work, it is of interest to state that 325 cars are cleaned and inspected at the California Avenue yards in Chicago each day and about 250 similarly treated at the Erie Street yards in the same city. The coach yards at Milwaukee and Council Bluffs also handle large numbers, while the cleaning done at other points on the system swells the total considerably. No details are too small to escape attention, as, for example, the corners of window sills are given extra cleaning, dining cars are inspected, while on their regular runs for the refrigeration of milk and vegetables and for the handling of butter, cheese, etc. Fish racks and baggage cars are kept thoroughly cleaned with cleanser and deodorant. Milk loading stations are watched to see that no milk is left on the station to attract flies or other germ bearing insects.

A card system has been installed in the principal coach yards by which a car inspector can tell at a glance whether or not the thorough cleaning demanded has been performed. If he finds any part of the work unsatisfactory, the responsible employe is instructed to go over it, thus insuring a maximum of cleanliness before going into service.

Observance of Rules on the Pennsylvania.

TO test the general observance of rules on the Pennsylvania Railroad, 5,961,732 observations were made and reported in 1913, with 8,120 failures, showing a record of 99.9 per cent perfect. These tests included a great variety of violations, from employes reporting late to smoking on duty, using locomotive whistle unnecessarily, leaving headlight burning in daytime, using foot to adjust couplers, going between cars to repair leak in air brake hose without notifying train crew, placing torpedoes where persons are liable to be injured by them, and the use of reliable watches. In all, 93 different kinds of observations were made. Exactly 784,675 observations were made as to the use of intoxicants by employes, and only 158 cases required discipline.

Track Inspection on the Southern Railway.

DETAILS of the methods by which every rail in the Southern Railway's 7,036 miles of track is annually subjected to the closest inspection are given in the March issue of the *Southern News Bulletin* in an article telling of the steps which the Southern has taken to prevent derailments resulting from broken rails.

The system of inspection which was adopted over two years ago is believed the most rigid and effective possible. The work is under the direction of the district engineers and division roadmasters and is done by the track supervisors and section foremen who closely scrutinize each and every rail while on their hands and knees and with eyes close enough to the rail to detect the slightest discoverable tendency toward weakness or failure and wherever such are found the rail is immediately removed. Detailed reports are made on each rail left in the track so that comparison can be made at the next year's inspection.

Presentation of Harriman Medals for Safety Work.

THE presentation of the E. H. Harriman Memorial Medals to the Southern Pacific Railroad for safety work by the American Museum of Safety, took place in New York on the evening of March 14th. Two of the medals went to the officials of the road, Mr. Julius Kruttschnitt, chairman of the executive committee, and Mr. William Sproule, president of the company, while the third was presented to an employe, Mr. William Schwab, a conductor on the Sacramento division, whose practical suggestions for safeguarding life and limb have been of value to the road.

This is the first award of the Harriman medals which were donated by Mrs. E. H. Harriman to stimulate a direct effort for the conservation of human life and to be awarded annually to the American steam railroad making the best record in accident prevention and industrial hygiene affecting the public and its own employes. The announcement that the first award would be to the Southern Pacific was made at the annual meeting of the Museum of Safety in December, 1913.

The awards were made in the studio of A. A. Anderson and the medal was accepted on behalf of the company by Chairman Julius Kruttschnitt, who, after paying a tribute to the late E. H. Harriman's genius, said:

"Team work and co-operation were Mr. Harriman's watchword and his wonderful success was in a great measure due to the faith in the meaning of the words with which he inspired his officers and men. I believe the high degree of safety in train operation attained by men of the Southern Pacific was made possible only by loyal and perfect co-operation following Mr. Harriman's ardently advocated policy of working together. In the year 1913, the company's locomotives in freight, passenger and work service, ran for a distance of 59,738,000 miles, a figure too large to convey any meaning. At this rate since last Saturday night the miles ran would girdle the earth forty-six times, or nearly seven times in one day, or once in three and one half hours. With so great a movement liability to accident is very great, yet 41,783,000 passengers were carried the inconceivably great distance of 1,756,482,000 miles, and this was done without fatality in train accident. Furthermore, it was done for the four years preceding with the same immunity. Among the forty-five thousand men engaged in pursuits not involving train movement there was one fatality in every 876,400 days or 2,400 years worked."

Chairman Kruttschnitt then paid a tribute to Mrs. Harrriman, who provided the medal, and President Sproule was given the silver replica. He said in part:

"In receiving the medal which the American Museum of Safety has seen fit to bestow on me, I do so with a keen sense of the representative relation I bear to the Southern Pacific Company. I fully realize and recognize how little could be attained in the high degree of safety achieving in the company's operations were it not for the loyalty and efficiency of the officers and staff and the men on the line, in every grade of the service.

"With a body of men imbued with the loyalty that makes for efficiency and imbued with the knowledge that efficiency cannot be had without discipline, great things may be done. I believe our winning of the medal is because of the loyalty, efficiency and discipline of all the company's forces in all the branches of the service which contribute to the safety of the passenger and so in accepting for myself this silver replica of the medal I desire to couple with it an expression of my appreciation of these high qualities in the officers associated with me and in my fellow employes throughout the service. The formal and nation wide recognition of safety as an imperious factor in railroad operation stimulates us to make further and persistent and intelligent effort to maintain the record of the past and to improve upon it. I desire also to express my personal gratification that the gracious lady who has given these medals in memorial of her husband under whom I served finds that the Museum's first bestowal of the medal is upon one of the Harriman lines."

Conductor Schwab said that close observation of conditions and practices of employes and the traveling public bring to any employe interested in safety work, many things that can be remedied. He said that employes are realizing more and more that the better protetcion of the traveling public means also added protection of their own lives and the happiness of their families. In referring to the company's efficiency tests he said that they have come to be a great factor in the prevention of accidents and that the elimination of excessive speed of trains with the fact that trainmen are not criticised for failure to make up lost time when the effort would endanger life and property and the close observance of the rules of the operating department have done much to establish the safety record.

The affair was attended by several hundred people. The Anderson studio was placed at the service of the Museum, making the scene of the presentation as unique and interesting in its character as was the occasion itself.

Queen and Crescent Route to Experiment with Automatic Train Stops.

A THOROUGH test of the automatic train stop is to be made by the Cincinnati, New Orleans and Texas Pacific Railway Company (Queen and Crescent Route) which has arranged to conduct a series of experiments to determine the value of this device in train service under practical operating conditions. The advocates of the automatic train stop have made very extensive claims as to its efficiency in preventing accidents, the most important of which is that it will automatically bring to a stop any train whose engineer has overlooked or misread a danger or caution signal, thus eliminating danger resulting from mistakes on the part of employes. The experiments to be conducted by the Cincinnati, New Orleans and Texas Pacific are for the purpose of determining to what extent these claims will be borne out by the results obtained in actual practice on a busy railway.

The first device to be tested was the Julian Automatic Cab Signal and Train Control, the test being made at Ludlow, Ky., on March 28th. This will be referred to in greater detail in a future issue of the RAILWAY WORLD.

Police Department Report of the Cincinnati, Hamilton and Dayton.

THE police department report of the Cincinnati, Hamilton and Dayton Railroad, as submitted to General Manager J. M. Davis, covering 1913 shows that 518 persons were arrested for crimes committed against the railroad and while on the railroad property. Of these, there were but four dismissals by the courts.

The report covered all classes of crimes. There were 228 cases of petty larceny, 66 for burglary and 170 for riding unlawfully on trains.

On the Toledo division 453 arrests were made, 57 on the Indianapolis division and 8 on the Wellston division. The total is an increase of 110 arrests as compared with 1912.

In commenting upon the report of the police department, Chief Special Agent Woodward sums up the criminal situation when he says:

"The increase in robberies was caused by the flood of 1912, which threw thousands of men out of work in the territory and brought thousands of thugs and thieves into the stricken district under the guise of laborers. These laborers took advantage of every opportunity to steal in the various communities and the railroads were the particular prey of this criminal class.

"The leniency of the courts also made it difficult to protect the railroad and its patrons."

"Rolling" One Hundred Thousand People an Hour.

ONE of the most unique and original methods of transportation ever devised for handling exposition crowds, and one which will effectually solve the problem of transporting the enormous crowds from the ferry building to the exposition grounds, is planned for San Francisco during the Panama-Pacific International Exposition next year.

The new method known as the roller conveyor system is similar to that which has been in use in factories for years, although this will be the first application of the mechanism to passenger traffic.

The cars will operate upon an elevated trestle having a fall of three feet to every hundred, and along which rollers are placed at intervals of a few feet, allowing the cars to coast easily. At intervals of four hundred feet the car will be lifted by a cable up a steep declivity to a height of twelve feet above the lowest point of the trestle track, and will then coast to the next similar station.

The entire system will cost only $350,000 and the expense of maintenance will be slight. Twenty motor stations will be necessary to operate the cables but each will require a smaller motor than that used on an ordinary street car.

A sight that never fails to amaze visitors to the Panama-Pacific International Exposition grounds is that of a train of freight cars speeding out of a nearly-finished exhibit palace. While all the entrances are large enough to admit locomotives and cars, the proportions of the immense buildings are such that the spectator does not realize this. Spurs of the exposition terminal railway system enter all the palaces and are now in daily use transporting lumber and materials for construction to the interior of the edifices. Later these tracks will be used in the installation of exhibits. When the exposition opens every track will be covered over, and will remain invisible until the close of the celebration, when they will again be used.

The accompanying artist's drawing has been distributed by the Panama-Pacific International Exposition Company as indicating the general appearance of the exposition grounds, after completion of the vast enterprises now under way. The exhibits will be grouped in eleven departments, as follows:

Department A, Fine Arts.
Department B, Education.
Department C, Social Economy.
Department D, Liberal Arts.
Department E, Manufactures and Varied Industries.
Department F, Machinery.
Department G, Transportation.
Department H, Agriculture.
Department I, Livestock.
Department K, Horticulture.
Department L, Mines and Metallurgy.

The combined area will amount to 3,731,000 square feet. A horticultural display of fifty acres, twelve acres of railroad and other outdoor exhibits, a drill and aviation field of fifty acres, State buildings covering forty acres and foreign buildings covering thirty-seven acres will be some of the features.

Aiming to prevent accidents at the crossings of its tracks in the cities and towns and on the highways, the Baltimore and Ohio management has issued a comprehensive code of rules to watchmen, clearly defining the duties of such employes and urging every precaution in the interest of public safety.

Under the new regulations the watchmen report to the track supervisors and are required to undergo an examination as to operating rules, signals and schedules. Daily inspections of the crossings are included in the work of the watchmen and miscellaneous repairs are to be made by the employe on the ground.

The crossing watchmen are provided with a white and a red flag, to be used in daylight; and between sunset and sunrise lanterns are used in signaling. A flag or lantern held at arm's length is a stop indication, and when the tracks are clear the flag or lantern is raised in a vertical position.

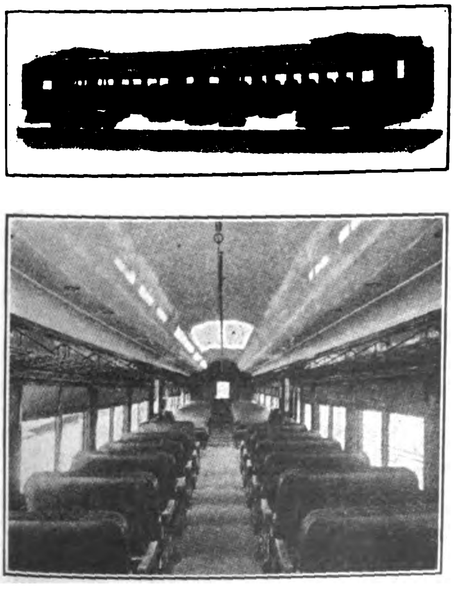
The watchmen are furnished uniform caps, with their occupation displayed on a metallic plate, to identify them before the public.

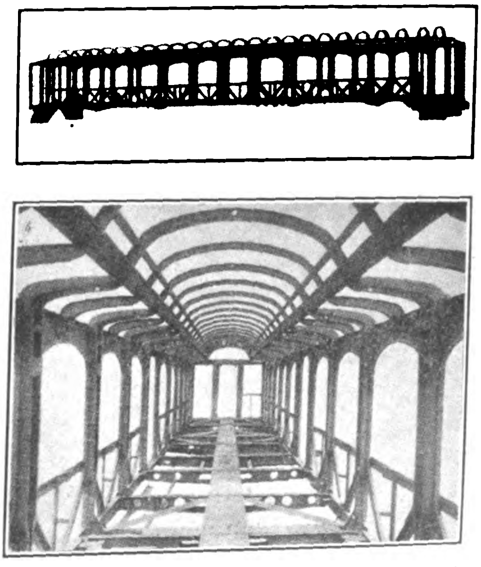
Mechanical

Steel Passenger Cars.

AT the February meeting of the New England Railway Club, the members listened to an instructive talk on "Steel Passenger Car Construction," by Mr. F. M. Brinckerhoff, of New York City. After dealing, in a comprehensive manner, with the general design of steel passenger cars from the standpoint of safety and comforts to passengers, low cost of operation, low cost of maintenance and moderate first cost, Mr. Brinkerhoff closed his discussion by describing, with the use of illustrations, the full vestibule, steel suburban passenger cars, operated on the New York, Westchester and Boston Railway.

These cars are 61 feet body length, 72 feet overall, seat 78 passengers and are equipped with electric motive power apparatus capable of maintaining a schedule speed of thirty miles per hour, making station stops approximately one mile apart. Each car weighs complete 119,500 pounds and Mr. Brinckerhoff stated that designs have recently been prepared of a similar car for operation on steam railway service. This latter car will be arranged for 86 seated passengers, the middle side door being omitted, and will weigh complete about 85,000 pounds, exclusive of storage battery or axle driven generator for lighting, but including all other necessary fixtures. This car will weigh about 15,000 pounds less and will accommodate fourteen more passengers


Exterior and Interior View of Full Vestibuled All Steel Cars on the New York, Westchester and Boston.


Showing Frame Work and Method of Construction of All Steel Cars of the New York, Westchester and Boston Road.

than the corresponding type of wooden car now in service on the road for which they are designed.

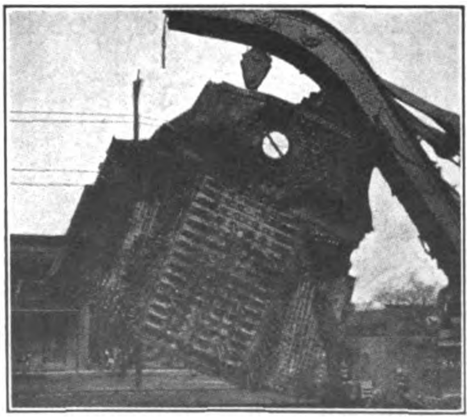
The following illustrations give an excellent idea of the cars employed on the New York, Westchester and Boston. It will be noted that the interior view shows several new features in steel car construction, notably the arched roof with light colored finish giving high reflecting value to the electric lamps. The car is fitted with two systems of lighting, the principal illumination coming from the lamps arranged along the side of the car, which are in service as long as the motive power remains on the car, and the second lighting circuit, being fed from the storage batteries, and being used only during such periods as the motive power is temporarily cut off from the car.

The construction views herewith presented are of particular interest. As indicated, the side plate is virtually a pressed channel continuous throughout the length of the car body, in one piece, and with side piers which are ten-inch pressed channel formation of one-fourth inch steel. At the side sill of the car is a seven-inch rolled steel channel to which all the side frame piers and posts are securely riveted. The use of a cross-bearer at each of the main piers of the side frame, securely supports the center sill construction against dislocation either upward or downward, and the diagonal braces in the underframe secure the integrity of the center sills against dislocation in a horizontal plane. This type of construction relieves the center sill from any vertical load and thus leaves its entire section available for resistance to impact shocks.

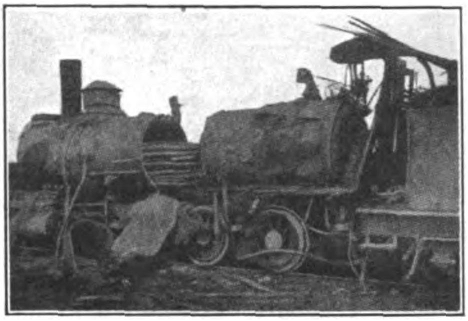
The great strength of the combined arch type of roof is manifest in this illustration. The roof sheets are in one piece from side plate to side plate, double lapped across the wide carlines, and are rivetted to their upper flanges. This form of roof Mr. Brinkerhoff asserted is about 1,500 pounds lighter than a monitor deck roof and is notably stronger and cheaper to construct on account of having fewer joints.

Results of Locomotive Boiler Inspection Law.

AT its December meeting the Western Railway Club was addressed by Mr. Frank McManamy, chief inspector of the division of locomotive boiler inspection of the Interstate Commerce Commission, on the Locomotive Boiler Inspection Law. Mr. McManamy pointed out that while the enforcement of such a comprehensive law has not been effected without some friction and opposition, and while to a measure, it has proved costly and has led to the sacrificing of certain ideas and practices, the fact is now generally admitted that the law on the whole, has proved beneficial to the carriers.



This Wrapper Sheet, Dome and Portion of Mud Ring Weighing Approximately 1600 Pounds, was Blown 1200 Feet in the Opposite Direction from the Back Head on Account of Explosion Due to Excessive Pressure.



Explosion Due to Defective Dome Owing to Flaw in Casting.

He asserted that the practice of conducting a rigid searching investigation of all accidents to locomotive boilers and their appurtenances sufficiently serious to justify a report, with the sole object in view of determining the exact cost and having the proper remedy applied, has done much to reduce the list of casualties which, during the fiscal year ended June 30, 1913, shows a reduction of over sixty per cent in the number killed and ten per cent in the number injured by failures of locomotive boilers and their appurtenances.

The following comparison of some of the most serious as well as some of the most frequent accidents during the first and last quarters of the fiscal year ended June 30, 1913, fairly represents the benefits which result from supervision over the condition of locomotive boilers and their appurtenances. It will be noted that for the six classes of accidents referred to which resulted in injury, ninety-five occurred in the first quarter and fifty-one during the last quarter.

	First Quarter			Last Quarter		
	Accidents.	Killed.	Injured.	Accidents.	Killed.	Injured.
Crown sheet failures	18	10	30	9	2	13
Flue failures	15	..	18	11	1	11
Injector steam pipe failures.	10	..	13	5	..	6
Arch tube failures	5	..	5	5	..	7
Water glasses bursting	36	..	36	16	..	16
Lubricator glasses bursting .	11	..	11	6	..	6

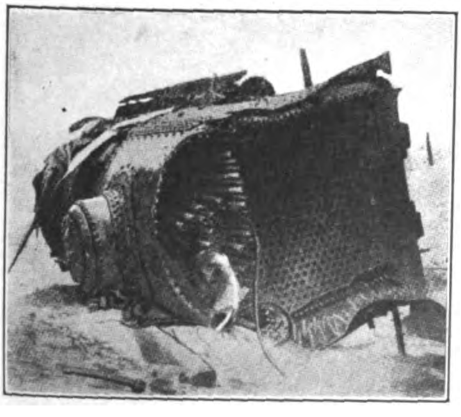
Mr. McManamy explained that perhaps a better illustration of the improvement which has been brought about, is that during the three months ended September 30, 1912, there were ninety-five accidents of the classes mentioned above with ten persons killed and one hundred and thirteen injured thereby, while during the six months ended September 30, 1913, there were ninety-four accidents with eight killed and one hundred and three injured thereby

While a very decided improvement on the whole is thus shown, it is pointed out that there are certain classes of accidents where, instead of an improvement, conditions appear to have grown worse. One illustration of this is in arch tube failures. An investigation shows that of twenty such failures, fifteen were caused by improper application or neglect, three were reported as defective and only one showed a clear rupture without evidence of improper application, neglect or defect in the tube

Tightening washout plugs under pressure is a practice that has also caused numerous accidents. These accidents are positively preventable and strict instructions should be issued and enforced never to put a wrench on a plug when there is pressure on the boiler. Another type of accidents which has shown an increase during the year is injector steam pipe failures. Out of a total of thirty-six accidents of this type, twenty-four of the failures occurred where the collar was brazed on the pipe and were due either to defective brazing or to the fact that the pipe or the collar was too thin at this point. The attention of injector manufacturers and locomotive builders has been called to this weak point and they are at the present time earnestly striving, through the efforts of a joint committee, to have adopted a connection which will remedy the trouble.

Another class of accidents in which there has not been an improvement is flue failures. During the year ended June 30, 1912, there were fifty-six failures which caused injury, and during the year ended June 30, 1913, there were fifty-four failures causing injury. In discussing this question, Mr. McManamy said, "The question of flue failures, although important in itself, has been mentioned principally because it leads up to what to me appears to be a more important question that should now be given serious consideration by the mechanical departments of the various railroads and by the departments of the Government with which I am connected, namely, shall superheater tubes be welded?"

"With the wonderful results claimed and in a measure obtained from superheaters, it appears to be a question of only a few years until practically all locomotives will use superheat. This will result in thousands of 5⅜-inch or 5½-inch superheater tubes being used where now there are hundreds. To the men on locomotives, the collapse or failure of one of these large tubes amounts to about the same as a crown sheet failure, because in either case, death or serious injury is almost certain. Therefore, if we are to have the same number of failures of superheater tubes due to welding that we now have with the smaller tubes, the injuries resulting therefrom will on account of the size of the tubes doubtless be so much more serious that in the interest of safety, action will have to be taken possibly even to the extent of prohibiting welds in such large tubes.



EXPLOSION DUE TO LOW WATER. GLASS WATER COCKS CLOSED SHORTLY BEFORE ACCIDENT TO MAKE REPAIRS. TOP COCK WAS PROBABLY NOT OPENED, AS IT WAS FOUND CLOSED AFTER EXPLOSION.

CONDITION OF FIRE BOX SHEET AS THE RESULT OF AN EXPLOSION CAUSED BY WATER FOAMING.

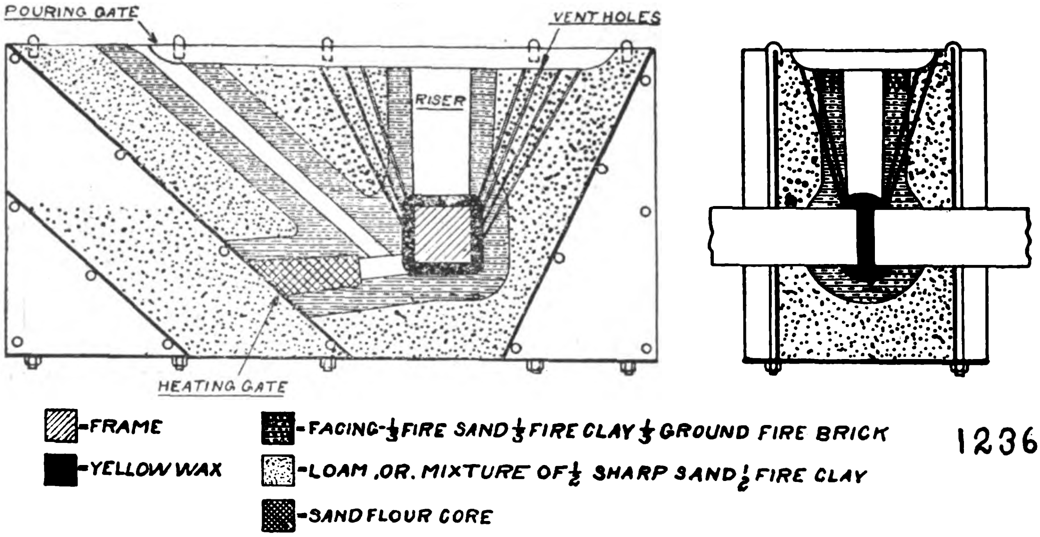
"Do not misunderstand me in this. I am not making a positive statement that welds in superheater tubes will be prohibited, but that it is a matter which is being closely watched, and what action may be necessary will depend on future developments, because a large percentage of such tubes now in service are comparatively new and have never been safe ended. Many shops where this work is being done are poorly equipped for handling it, adequate tests of welded tubes are in many instances not being made, and, as might be expected, there is a wide divergency of opinion as to the best method of doing such work. That the strength of a weld is practically an unknown quantity has been demonstrated times without number. The fact that a number are tested and found good is not an indication of what the next one will do, and, for this reason it is the generally recognized practice that where the highest degree of efficiency and reliability is required, welds are prohibited. It is the general practice not to permit the use of welded radials or other boiler stays. Almost all roads prohibit welding arch tubes, safety appliance standard prohibits the use of welded brake shafts, yet in none of these things is reliability more essential nor failure more disastrous than in superheater tubes."

The Application of Thermit in Locomotive and Shop Repairs.

AT the regular January meeting of the Railway Club of Pittsburgh the members were entertained with a joint address by W. R. Hulbert and H. D. Kelley, of the Goldschmidt Thermit Company, who talked on "Thermit and its latest development in railway shop practice."

Mr. Hulbert explained that the fact that aluminum is hard to separate from oxygen is taken advantage of in the thermit reaction, as the high affinity of aluminum for oxygen permits of a chemical reaction between the two when they are heated hot enough.

In making a thermit weld the parts to be united are first arranged with a space between them varying from one half inch to two thirds, depending upon the size of the sections. Where the


POURING GATE
VENT HOLES
RISER
HEATING GATE
▨-FRAME
■-YELLOW WAX
▦-FACING-⅓ FIRE SAND ⅓ FIRE CLAY ⅓ GROUND FIRE BRICK
░-LOAM, OR, MIXTURE OF ½ SHARP SAND ½ FIRE CLAY
▩-SAND FLOUR CORE

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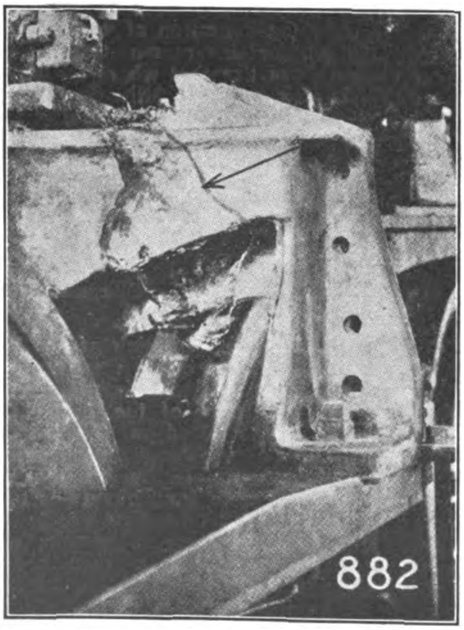
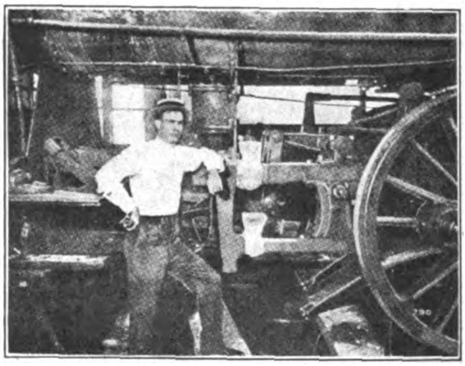
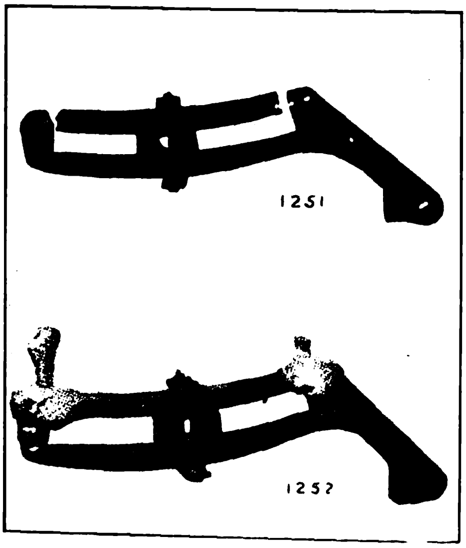
pieces to be welded are in two parts, it is a simple matter to provide the space, but in the case of the fracture, it is often necessary to cut out the metal by means of the oxy-acetylene cutting flame or by a slower process. Mr. Hulbert stated that in the case of welding locomotive frames, it was almost always necessary to cut out the fracture. Thermit, as he pointed out, is a mixture of aluminum and iron oxide which, when ignited, reacts. The aluminum combines with the oxygen of the iron oxide, while the iron is set free and comes down as a highly liquidated steel at a temperature of 50,000 Fahrenheit or about twice the temperature of ordinary molten steel. When this is poured around the sections to be united it will melt those sections and amalgamate with them so that the whole will cool down to form a single homogeneous mass.



Guide Yoke Weld by Chesapeake and Ohio Railroad at a Saving of $300.00.

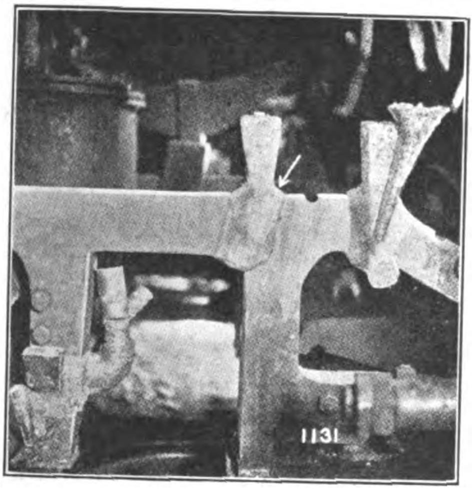


Two Thermit Welds on Engine Frame of Toledo, St. Louis and Western Railroad.

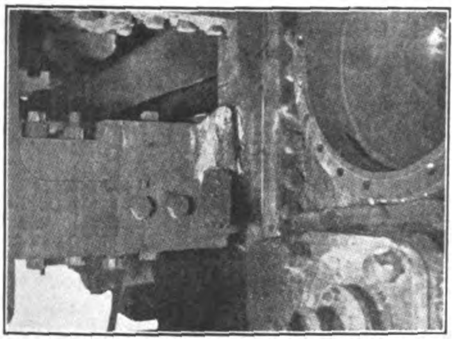


Showing Thermit Weld in Broken Engine Link.

First picture shows link lined up previous to welding, and second picture, the finished welds previous to machining.



Difficult Welds on Frame of Engine of Chicago, Rock Island and Pacific.



Thermit Weld in Splice of Locomotive Frame Showing Weld Near Cylinder.

Dealing particularly with the welding of a locomotive frame, of which the following illustranecessary to jack the frame apart obout one-eighth to three sixteenths of an inch before putting on the mould in order to allow for the contions are examples, Mr. Hulbert stated that it was traction of the thermit steel with the metal when the weld cools. It was asserted that the great economy of the process in locomotive repair work has led to its adoption by practically all the railroads of consequence in the United States, Canada and Mexico, it now being employed on 421 different railroad shops in North America.

Mr. Hulbert stated that it is not only on locomotive frames that thermit finds extensive use in railroad shops, as it can be applied to equal advantage in the welding of broken driving wheel spokes, side rods, connecting rods, rocker shafts, cross head guides, cylinder saddles, mud rings and other broken sections too numerous to mention.

The Hancock Coal Sprinkler.

MOST accidents in a locomotive cab are due to the failure of the coal sprinkling apparatus. Water for sprinkling is usually taken from the delivery pipe of the injector, and the temperature is so high and the pressure so great that when the delivery hose becomes clogged, as it frequently does as a result of the heat and pressure destroying the inner lining, the hose either bursts or is blown off the connection scalding the occupants of the cab. Of all cab accidents, seventy per cent are said to come from this source.

The Hancock Sprinkler, which acts on the principle of an ejector, is so designed that it is absolutely proof against accidents of this kind.

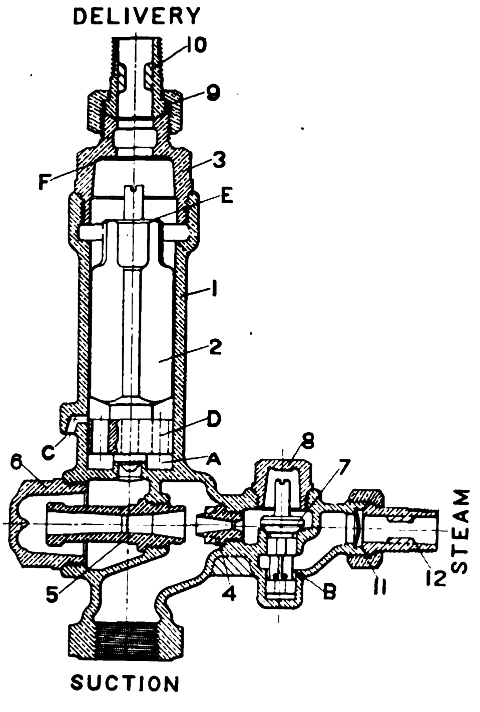
The principal feature of the Hancock Coal Sprinkler (made by the Hancock Inspirator Company, New York) is a valve which automatically discriminates between steam and water and its action is so positive and reliable that there cannot be a sudden and unexpected discharge of steam through the hose.

The sprinkler is generally applied on the strainer or on the suction pipe of the injector of the locomotive by the use of a short connecting nipple having a bend so that the sprinkler will be in a vertical position. A valve is placed in the steam pipe at a point where it can be conveniently reached.

In operating the coal sprinkler the steam valve in the pipe is opened wide and that action opens the Valve 7. That action also closes the drip hole B, the piston end on the lower end of guiding stem covering the hole. Steam will now flow through Nozzle No. 4, forming a jet and combining with water in Valve 5. (But there never will be a flow of steam in starting because tubes 4 and 5 are always under water by reason of the location of the sprinkler at a point lower than the tank.)

Steam will flow into the pressure chamber A and Valve 2, which has been closed heretofore, will be lifted. Port C, which has been opened heretofore, will also be closed and the water will be forced through the delivery pipe and into the delivery hose.

The accidents resulting from the use of a



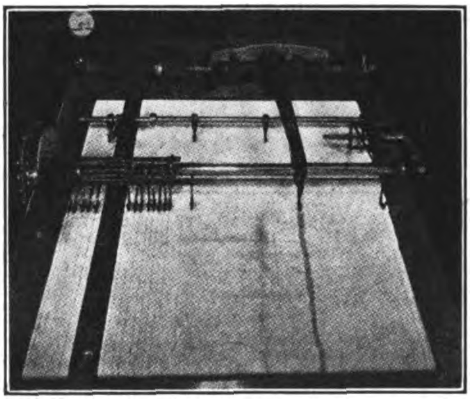
Detailed Drawing of Hancock Coal Sprinkler.

sprinkler, have generally been caused by an interruption of the water supply due to an obstruction such as leaves waste or coal at the strainer, or by the failure of the injector to work. Should the flow of water be interrupted or the injector refuse to work, where a Hancock Coal Sprinkler is used the valve No. 2 which discriminates between steam and water will close the sprinkler so that no steam will escape into the hose; instead the steam will be blown back toward the suction pipe, will flow into the pressure chamber A, and force Valve 2 upward.

The end E of valve 2 will seat against the surface F thus making it impossible for steam to flow into the delivery tube.

When not operating, both valves will seat. The discriminating Valve No. 2 is heavy enough to prevent water flowing up the delivery pipe and then all the water in the delivery pipe will flow out of the drain hole C. At the same time Steam Valve 7 will seat, no water will flow up the steam pipe and all water or steam in the steam pipe will drain out at the hole B.

This sprinkler uses comparatively cold water, no steam can escape, it is self-draining and can not freeze.



RECORDING TABLE OF DYNAMOMETER CAR.

The Erie's New Dynamometer Car.

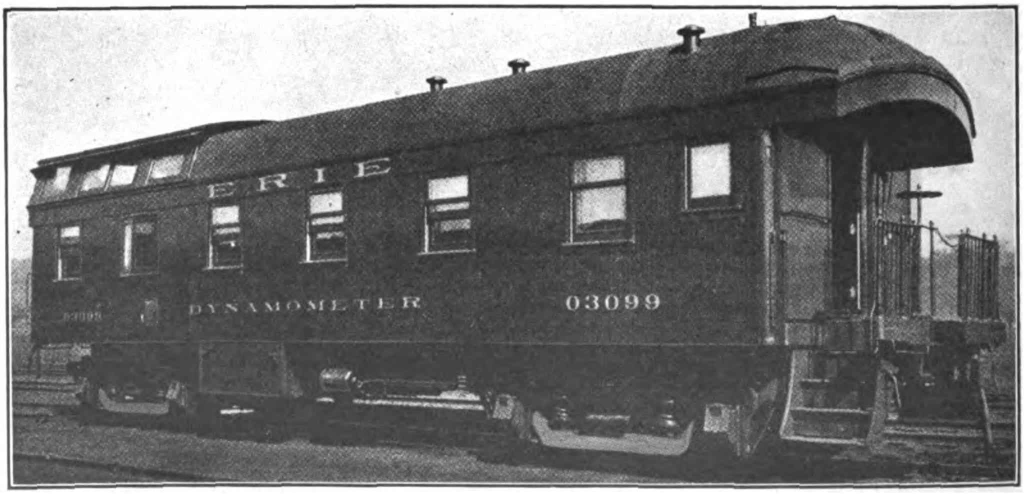
THE Erie Railroad, through its mechanical department, has recently placed in service a dynamometer car whose general appearance is indicated in the accompanying photograph. All but the recording table and the underframe was constructed in the Erie shops at Meadville. The dynamometer is of the liquid type with double pistons twenty inches in diameter, whose heads press against blind rubber caskets covering the liquid cylinders from one of which the pressure of the drawbar pull is registered, and from the other, the buffing. The car is provided with a possible pull or shock registering capacity of a million pounds, and also has the means of recording locomotive data while the engine is standing still. This is accomplished by means of a supplementary record which is four inches wide. When the car is at rest the roll is driven by a motor. Night running is accomplished by placing hoods for search lights at the floor level on either side of the car.

The Wright Stabilizing Machine.

THE one defect which has thus far kept the aeroplane from becoming a practical device for transportation purposes, has been its lack of stability. Aviation from the start was, and still remains, too dangerous a pasttime or business to become popularized in either direction.

The adherents and champions of this new method of transportation have long recognized this serious handicap, and many able minds have been directed towards its elimination, with but indifferent success. The most recent stabilizing device is offered by the father of aviation, Orville Wright, and if only on account of its origin, merits at least respectful attention. Whether his solution of the problem may prove to be the final one is a mooted question, but a writer in the "London Sphere" is of the opinion that it probably will, at least under certain restricted conditions. He writes:

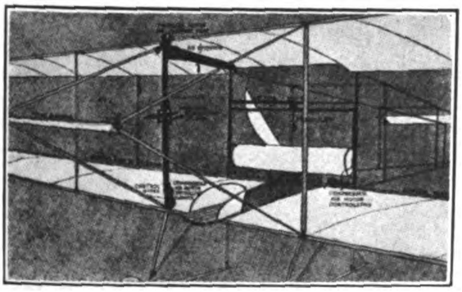
"Mr. Orville Wright, after making experiments extending over several years, has invented an automatic stabilizer for aeroplanes, so that for



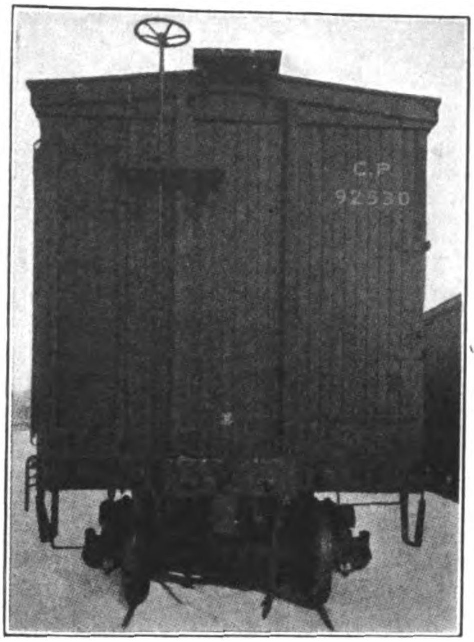
THE NEW DYNAMOMETER CAR OF THE ERIE RAILROAD.

a certain while the machine 'will fly itself.' The machine is to be 'fool-proof.' The apparatus is air-driven; in other words, a small propeller-driven air-pump compresses the air in the reservoir. This is carried by pipes attached to the struts through a check-valve. This valve is controlled by a vane which is actuated by the wind-pressure and so works the valve that controls the compress-air engine, which in turn works the elevator. To balance the machine, a pendulum controls the valve which is attached to the pipes to the air-engine that supplies the power to work the ailerons. Expert aviators who have been interviewed think that the device would be useful for long flights or for single-man scouting, when the pilot could leave the machine to look after itself while he spies out the country below. But otherwise they cónsider that the man-only control is still the best and safest method of flying until we can perfect a machine which will be automatically stable without loading it with a number of delicate mechanical devices which are always liable to get out of gear. There are two schools of thought working on this great problem, one to make the machine itself stable by the construction of its surfaces, of which the Dunne is an example, and the other is the mechanical device on which Wright and Curtiss are working.

"Naturally the question of stability is of the greatest importance for the simple reason that an unstable machine means continuous work for the pilot, and a long flight on a machine of this type would be impossible unless it had duplicated control and two pilots so that one could relieve the other. Mechanical devices for gaining stability, if in good working order, would certainly be able to balance an unstable machine, but it is argued by the opponents of this system that it would be far better to concentrate our energies on the machine, which should be so constructed that the planes themselves act as balancers, as has been attempted in the Dunne biplane in this country, and to an even greater extent in Germany, where all the machines have planes not unlike the wings of a bird. To illustrate the point, we may take the case of a boat, which is more or less balanced on the sea by giving it a keel, enabling it to maintain its position in any ordinary sea. . . . A large number of experts explain away the possibilities of the mechanical device for aeroplanes and emphatically state that we must attempt to discover the secret of keeping the aeroplane from overturning by some naturally stable form, just as our ancestors found that by scooping out a log they could sit in it without experiencing the troubles of balancing with which they had previously to contend."



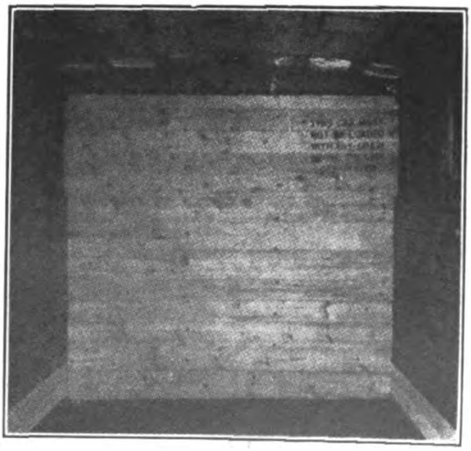
AEROPLANE SHOWING APPLICATION OF WRIGHT'S STABILIZING MACHINE.



CANADIAN PACIFIC BOX CAR END POSTS REINFORCED BY MEANS OF Z-BARS BOLTED THROUGH TO INSIDE LINING.

Reinforcing Wooden Box Cars.

THE Canadian Pacific Railway Company has recently been conducting some interesting experiments in the reinforcing of wooden box cars, in order that such equipment may be kept in service longer, without resorting to the repair track for repairs to center sills, draught gears and end structures. These experiments have led to the development of methods by which such troubles have been overcome with a minimum increase in cost and with no further delay to the car than if the original structure were to be renewed. For example, defective wood center



CANADIAN PACIFIC BOX CAR SHOWING RELINED END.

sills are replaced with 6-in. by 22.7-lb. steel "Z" bars. These sills are made up at the Angus shops of the road at Montreal, and shipped to all repair points where sill work is being done. The steel sills are bolted to the needle beams, rivetted to the body bolsters, and are securely attached to the end sills. Of the 2,700 cars equipped with these sills, the failures are stated to have been no more numerous than would have been experienced with any of the more costly steel underframes.

In reinforcing the ends of box cars 1¾-in. lining is applied over the old linings. This is an inexpensive method of repair inasmuch as the cost of repairs to the original lining is saved. The end posts which are so frequently broken are reinforced on the exterior by means of 3-in. by 6.7-lb. "Z" bars which are bolted to the old posts (the cracked posts not being removed), the bolts also serving to secure the heavy inside lining.

An Interesting Dump Car.

THE following photographs illustrate one of a number of cars recently constructed by the Orenstein-Arthur Koppel Company of Pittsburgh, Pa., to be used in railway ballasting, filling and construction work.

The car is all-steel with wood floor planks inserted instead of being wooden car tied together by a few iron bars and therefore, repairs are reduced to minimum as the only parts which wear out are the floor planks and these can be replaced without disturbing the frame of the car.

The ends are steel plate reinforced by six heavy gussets which are riveted to the long beams.

The doors are steel plate inside and outside with wood filler beams thus combining the elasticity of wood with the strength of steel.

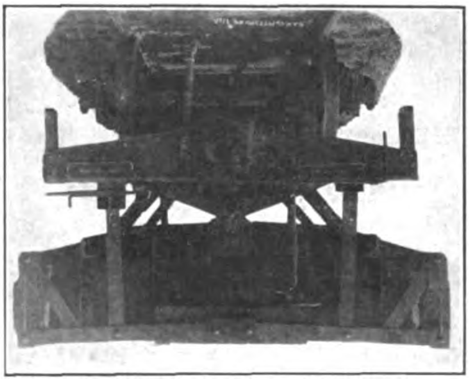
The side chains which usually are used on cars of this type to hold them in position have been omitted and an automatic locking device substituted, this consisting of a heavy cast steel hook at each bolster. This hook engages downward-projecting links on the car. Both hooks on each side of the car are operated by levers placed on the end sill at diagonally opposite corners.

This construction makes it possible to unlock the car for dumping instantly and when the car is again brought to the upright position it locks automatically.

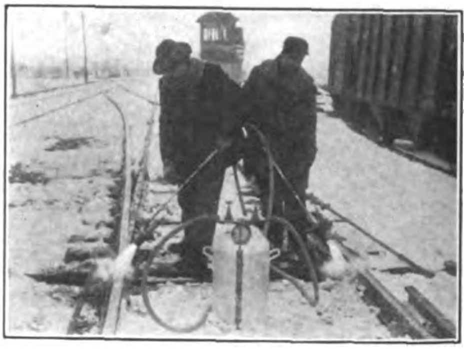
The underframe and end sills of the car have been made especially heavy and to conform with the Interstate Commerce Commission requirements, so that the cars can be shipped anywhere on their wheels and axles in trains consisting of heavy standard gauge equipment without danger of being injured.

The Employment of Brazing Machines for the Removal of Snow and Ice.

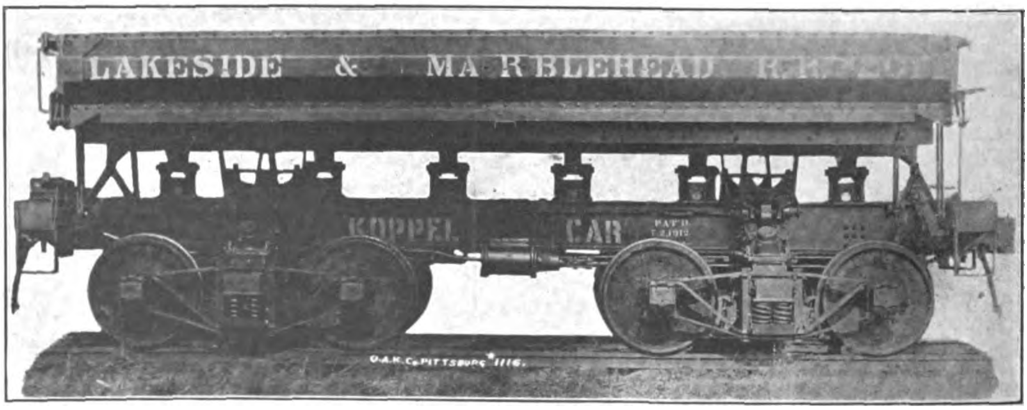
THE accompanying photographs illustrate the employment of the Turner brazing machine for the removal of snow and ice from



END VIEW OF ORENSTEIN-ARTHUR KOPPEL DUMP CAR.



THE METHOD OF EMPLOYING THE TURNER BRAZING MACHINE FOR THE REMOVAL OF SNOW AND ICE FROM SWITCHES, ETC.

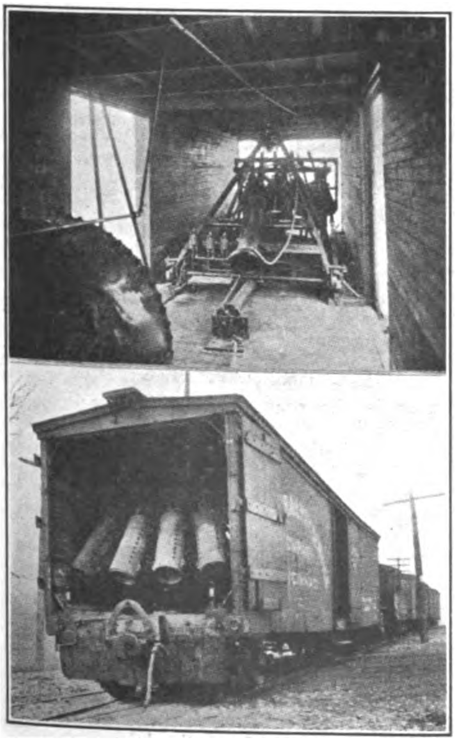


THE ORENSTEIN-ARTHUR KOPPEL DUMP CAR WHICH EMPLOYS AN AUTOMATIC LOCKING DEVICE INSTEAD OF THE SIDE CHAINS USUALLY EMPLOYED ON THIS TYPE OF CAR.

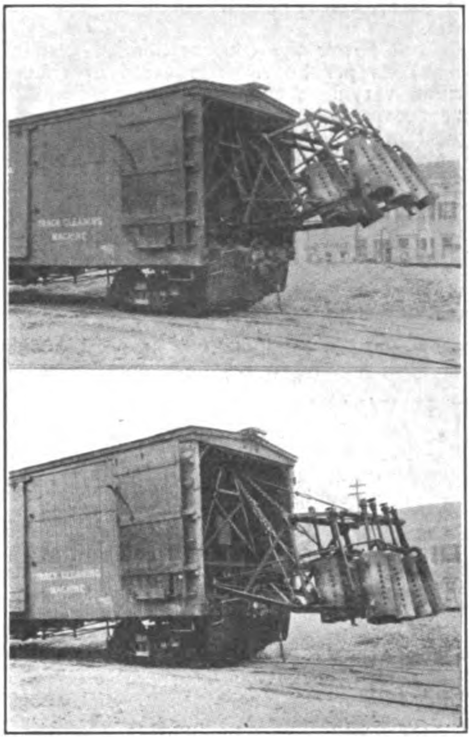
Showing the Employment of the Brazing Machine with Fuel Reservoir Located Outside Tracks.

switches, frogs, interlocking connections, guard rails, switch stands and many other places.

This machine consists of two powerful burners each attached to a flexible oil tube connected with a seamless steel tank of eight gallons capacity with air pump and gauge. The powerful flame from the two burners can be connected or directed on a single point or used independent at any angle. The machine will burn for five hours in any blast without filling. In track operations, the machine can be placed beside the track and two men can work at the same time. Either gasoline or kerosene can be used or fuel. The machines are also employed in car repair shops, round houses, machine shops, boiler shops, etc.



Interior Views of the Lamb Weed Burner Car. Showing the Burner, Carriage, Tank and Fittings in Place.



Two Positions of the Burner When Extending from Car.

Upper position employed when passing over bridges. Lower position, when in full operation for the destruction of weeds.

The Lamb Weed Burner.

THE following photographs show the general appearance of the Lamb weed burner and the manner in which it is employed in clearing the right of way of weeds and other material which interferes with operation such as snow and ice. The device consists of a battery of burners mounted on a carriage so that it can be projected out over the end of the car. The carriage is made of structural steel and the wheels confined in twelve-inch channels for safety in transit and to keep the battery in place when in operation.

The length of the runway is regulated to extend the battery ten feet from the car and the movements of the carriage and battery are controlled by cylinders actuated by compressed air from the locomotives. The battery can be raised and lowered at will so that the fire can be directed to the ground or in the air when passing over bridges. Gasoline is employed as fuel, the battery having seven burners. The gas is forced from the generating coils through needle point orifices by compressed air at a pressure of one hundred pounds or more and the flame covers a width of twelve feet at the point of contact on the ground. The capacity of the fuel tank, which is also used as a receiver for compressed air, is 1,200 gallons. All apparatus is fastened strongly and firmly to the platform of the car and only all steel or steel covered cars are employed. A steel superstructure is built over the car to protect the machinery from the weather and all cars are equipped to pass interchange on all roads in the United States.

At full power the consumption of gasoline is 200 gallons per hour. The speed of transit in burning varying from four to twelve miles per hour according to the character and age of the vegetation. The average operating cost of burning weeds is about $4.00 per mile. This does not include motive power and rental. The best results are obtained when the growth is young, the burner then desiccating and destroying it entirely. It is asserted that the weed burner should destroy fifty miles per day unless the growth is very heavy and old and provided of course that it has the right of way.

Cast Iron Wheel Records.

H. H. VAUGHAN, assistant to the vice-president of the Canadian Pacific Railway, delivered an interesting address before the January meeting of the Canadian Railway Club on the above subject. He said in part:

"Practically all railroads have abandoned any form of cast iron wheel record which follows the history of each individual wheel. Apart from the enormous amount of work in reporting and entering the movements of several hundred thousand wheels which are in service in a large system, it is practically impossible to avoid incorrect numbers being reported.

"The difficulty of straightening out the errors that arose, errors which frequently were not disclosed for years after they actually occurred, and the correspondence involved in the attempt, were sufficient reasons for discarding a system that did not furnish sufficient useful information to justify its expense. The writer has not investigated methods used on other roads to describe them with accuracy in this paper, but believes that apart from the records maintained for guarantee purposes, the only systems in general use are those in which the average life of wheels removed from service for various causes, is determined in various ways. It is usual to show a figure for the average life of wheels obtained by dividing the number in service by the number removed per year, but this figure is not of much value as it depends more on the rate at which the number of wheels in service increases, than on the actual life of the wheels removed. Thus if the number of wheels in service remained stationary for a period of years, while the number of wheels removed increased 25 per cent, it would indicate a decrease in the average life of the wheels of 20 per cent, while if during the same period the wheels in service had increased 50 per cent, the same increase in the number of wheels removed would indicate an increase in the average life of 20 per cent.

"Now if the increase in the wheels in service had taken place in two or three years, it would have had comparatively little influence on the wheels removed, so that an increase in the life of the wheel might be shown by these figures, while a reduction had actually occurred. In addition reports of whels removed on foreign lines are not obtained correctly, especially for wheels removed on handling companies account and in general it is not uncommon for a life of twelve to eighteen years to be shown for wheels, when as a matter of fact they are lasting about five or six.

"The figures showing the life of the actual wheels removed can be obtained with considerable accuracy and with simple reports and records. Each wheel is marked with its number, the date cast, etc., so that no complications are introduced by recording the date put into service and the date removed. While no record is usually kept of any time the wheel may be out of service, or the movements of the car under which it has been placed, these factors are relatively unimportant on a large number of wheels and the average life of the wheels removed is a figure of sufficient importance on any road to justify the records and statements required. It should properly be kept by weight of wheels, so that any alteration that occurs in the life of wheels under the same weight of equipment may be distinguished from the changes due to the introduction of a greater proportion of heavier equipment or similar causes.

"While the average life of wheels removed affords valuable information over a period of years, it does not enable the result of any variation in the quality or service of the wheels to be detected until considerable time has elapsed and then only in a general way. When the wheel foundry methods of the Canadian Pacific Railway were revised in 1908, it became desirable to introduce some system by which it could be determined whether better service results were being obtained or not, without the complications of the old individual records.

"This was accomplished in a satisfactory and simple manner by comparing for each year's make of wheels, of the same weight and manufacture, the number removed for various classes of defect in each year of their life. This system does not require any additional reports over those commonly used. The only information needed is the make of the wheel, weight, date cast, maker and cause of removal, items that are likely to be reported accurately and which are those required for a record of any kind. As the number of wheels of any group cast in each year is known, the number removed in each year's life for each cause may be expressed as a percentage of the number made and this percentage may be compared year by year to determine the comparative service obtained from the different wheels.

"As the records are compiled in the Canadian Pacific Railway, no attention is paid to the date the wheel is put into service. For wheels made in any one year, the number removed in that year are taken as being removed in the first year of their life, those removed in the next year, as in the second year of their life and so on. This introduces an inaccuracy in the case of any particular wheels placed in service towards the end of the year, but the error becomes unimportant after a year or so and the labor of compiling the record is greatly reduced."

Salt as a Timber Preservative.

IN replacing a railroad trestle recently burned along the north shore of Great Salt Lake, engineers have just found that the piles are still perfectly sound after 43 years of service. Looking for the cause, since these were only local pine and fir, they found the timbers were impregnated throughout with salt from the lake.

At another point on the lake, 18-inch piles, set 29 years, are similarly preserved with salt which has penetrated to their very center. Timbers in the Southern Pacific trestles across Salt Lake, placed in 1902, appear to be as good as on the day when the piles were driven. They have been preserved well above water line by the salt dashed on to them by the waves, a fact apparently anticipated by the engineers who built the trestles.

The first transcontinental telegraph line, built before the railroad, extended west from Salt Lake City through the prosperous mining camps of Eureka, Austin, and Virginia City. When the railroad was built, the telegraph line was transferred to follow its right of way and the old poles sawed off at the ground. An engineer who recently examined the butts left in the ground in the salt desert near Fish Springs found that, although fifty years had passed since the poles were cut off, the old butts were perfectly sound.

Telephone and electric companies in the Salt Lake valley have used the local salt for preserving poles. When set up, about 75 pounds of salt is placed around the pole on the ground. This method can not be used, however, when the pole is on or near a lawn, or in any place where vegetation is desired.

It is pointed out that the reason why the waters of Salt Lake act as a strong preservative, as distinguished from ocean waters, is because the lake water is so much saltier, being practically a saturate solution. Preservation with salt is of no use in ocean piling against the attack of teredos and other marine borers.

Experts in the forest service who have been investigating the preservative treatment of timber offer the suggestion that ties and poles which have been immersed for some time in the waters of the lake ought to be impervious to decay if the salt is not leached out by the action of the elements. It has been suggested that this can be guarded against, for example, by painting the butt of the pole with a coat of creosote which will keep out the moisture and keep in the salt.

Electrical

The Trend of Electric Locomotive Construction.

IN a recent issue the *Commercial and Financial Chronicle* calls attention to the fact that the building of electric locomotives is still restricted within limits imposed by the system of current transmission on the lines for which engines are to be used.

Engineers in making their choice between these systems and in designing heavier and more powerful locomotives for high-speed passenger trains and for haulage of freight over severe mountain grades have many considerations to take into account other than the simple comparison of weight and maintenance that may be drawn between engines constructed to suit one or other of the rival systems of current transmission.

The advantages of greater simplicity in one type of locomotive may be offset in the greater expense of coal used in raising the energy at the power house. Locomotives, however, used on systems of both direct current and single-phase installations have been running continuously so satisfactorily that arguments as to their comparative merits fall somewhat flat.

The new rolling stock ordered in 1913, in addition to new improved engines of the same types, has a new type of locomotive, the so-called split-phase locomotive, designed specially for the Norfolk and Western Railway. These locomotives, 24 of which have been ordered of 135 tons weight and 11,000 voltage, will supersede some of the most powerful Mallet steam locomotives of the world and haul 3,250-ton trains at 14 miles per hour instead of seven, thus doubling the capacity of the mountain division of the road. The electric zone of the New Haven system now calls for 100 electric locomotives, embracing switcher, freight and passenger services. The Pennsylvania Railroad's 600-volt locomotives in their second year's operation established higher records than in the initial twelve months of the service. But with the increase in the potential voltage to 2,400 volts and the building of turbo-generators in units of 35,000 kilowatts a corresponding increase in the size and power of locomotives seems a certain accompaniment.

Last year showed no great step forward in output, chiefly because of financial reasons, as the number of electric locomotives ordered was only 68, as against 65 in the preceding year; but the engines now building include several of the larger type. The New York Central has ordered 16 high-speed engines for terminal service out of New York City, 10 of which weigh a hundred tons each and develop 1,460 horsepower continuously. They will operate 800-ton trains on the local branch at 65 miles per hour. The other six, which are of 110 tons, will operate 1,200-ton trains on the level straight track at 57 miles per hour. The Canadian Northern Railway, for its electrification of the tunnel and terminal entering Montreal, will employ seven locomotives of 83 tons weight operated on the 2,400-volt direct-current and the Canadian Pacific has similarly decided to electrify its Rossland division on the same system and employ four 92-ton locomotives for the service.

While attention has been mainly concentrated on such powerful units already employed or being constructed for the big "common carriers," the remarkable increase in the use of electric locomotives for industrial, mining, dock, canal and similar purposes has generally escaped notice. No complete official census has been made, nor, indeed, has it been possible so far for any comprehensive set of figures to be collected and collated. It is, however, accepted in authoritative quarters, basing the estimate on authentic information, that there are at least 12,000 electric locomotives used on private or semi-public trackage for the use of mining, industrial and similar plants requiring yard and local transportation facilities. These units range in power capacity from 15 to 20 horsepower and in weight from a few tons up to the biggest size of 80 tons. They are, of course, used by common carriers, of which there are now sixty-eight employing such small locomotives for subsidiary work.

The *Chronicle* believes that great development may be expected in the use of electric power in freight and assembly yards and for similar switching service in and around industrial plants. The switching service, owing to its inherent requirements, has always presented the most difficult problems for the operating electric engineer.

But improvements in the control equipments and the slow-speed electric locomotive is producing an excellent type of engine which will doubtless prove beneficial to the various belt lines joining freight terminals in cities or in linking up waterfront wharves with trunk line systems.

Terminal Improvements

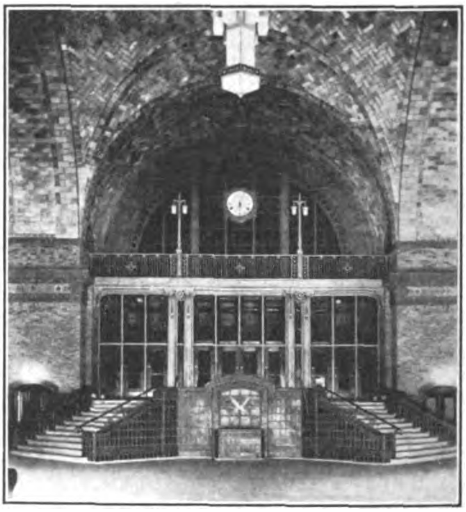
Rochester's New Passenger Station.

THE New York Central Lines has given to Rochester, New York, a new and artistic passenger station, which in the future will be used by all through trains of this system, as well as by the branch line trains on the Auburn Road, the Rochester and Charlotte branch, the Rochester and Niagara Falls branch and the Ontario and St. Lawrence division. The new station, which is of the through type, has eleven station tracks and is served by six platforms in addition to two through passenger and two freight tracks not adjacent to these platforms. Each station track has a capacity of fourteen cars or a total capacity of 154 cars.

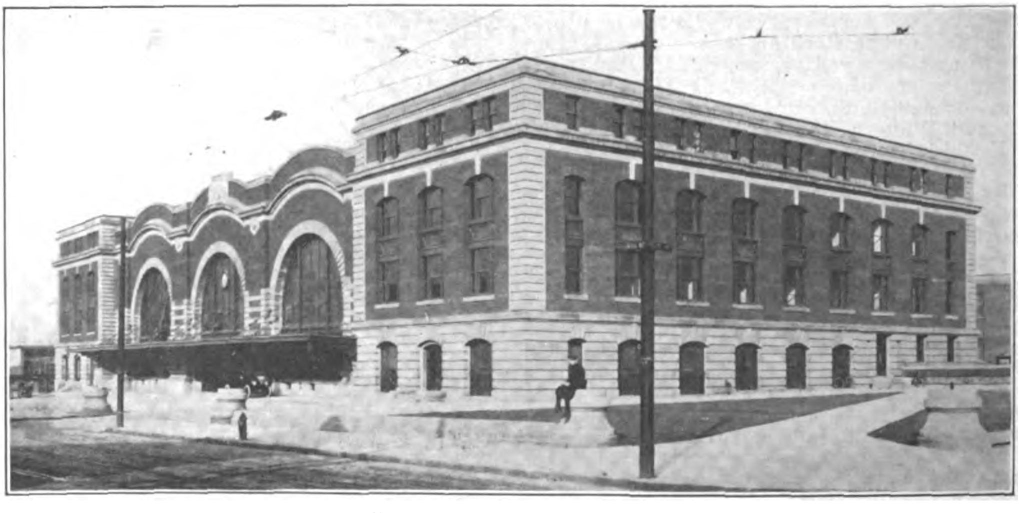
The frame of the building is of steel and the walls Medina sandstone up to the second floor level, and of a reddish purple brick for the remaining height. Long Meadow sandstone is used for trimming purposes. The four story portions at each end of the building, as indicated in the photograph, contain accommodations for the office force.

The main waiting room which is about ninety feet by one hundred and fifty-five feet and fifty-four feet high, is unusually large and artistically finished. Seating capacity for four hundred and forty people is provided and a broad stairway leads down from the main entrance to the waiting room floor. The benches are surmounted by double bracketed reading lamps. The coloring effect is particularly attractive and gives the room a warm rich appearance without any suggestion of the ornate.

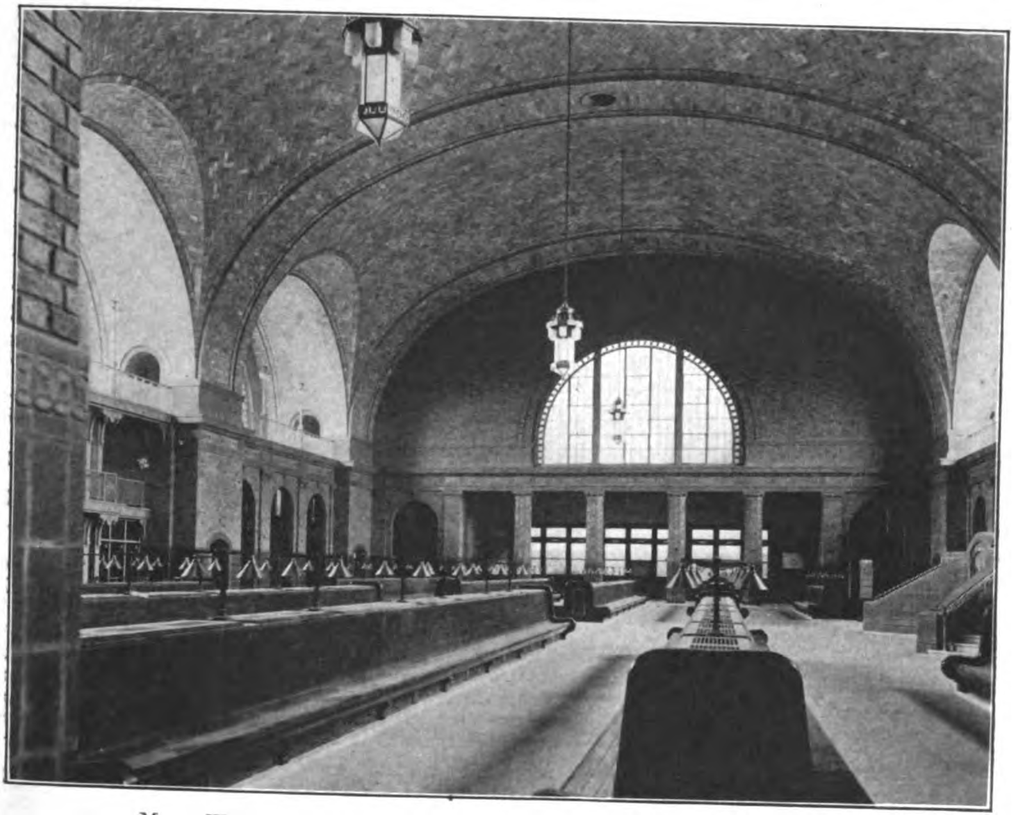
Along the street side of the waiting room on either side of the main entrance are located the information and parcel rooms and the men's pay toilets. Directly across the room from the main entrance is the vestibuled entrance to the concourse. To the east of this entrance is the baggage checking counter which adjoins the baggage room on the rear. On the other side of the concourse entrance are the news stand, telegraph booth and a passageway from the concourse for the use of passengers coming from trains who want to enter the waiting rooms. At the west end of the waiting room are located the lunch room and dining room with the smoking room and men's free toilet in the corner next to the street. A row of telephone booths is placed along the wall between the entrances to the lunch



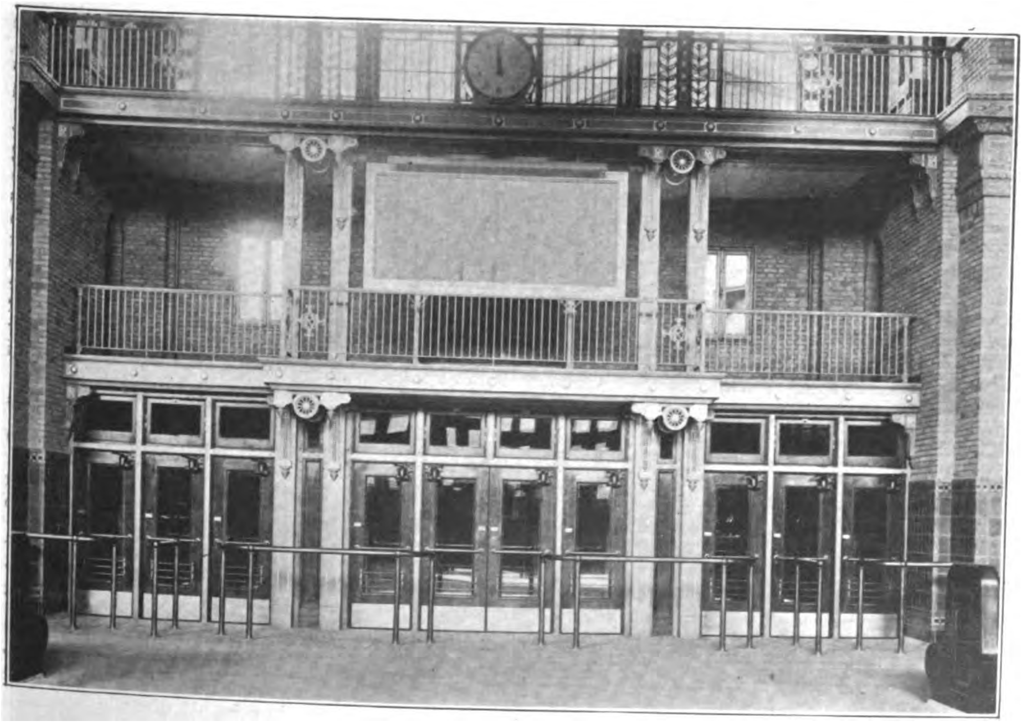
MAIN ENTRANCE TO WAITING ROOM.



THE NEW YORK CENTRAL LINES NEW PASSENGER STATION AT ROCHESTER, N. Y.



Main Waiting Room of the Rochester New Passenger Station.



Exit to Trains.

room and dining room. At the opposite end of the waiting room is the ticket office and in the front corner on that end are the women's rooms and toilets. Quarters for a barber shop, the station master, the station police and a branch station of the post office are provided on a mezzanine floor around the waiting room.

A special hospital room is provided in the express building which can be reached from the first platform. This room is fitted with hot and cold water and all necessary first aid supplies.

Chicago Railway Terminals.

W. H. LYFORD, general counsel of the Chicago and Eastern Illinois, delivered an extremely interesting address before the Traffic Club of Chicago, on February 26th, dealing with proposed improvements in terminal facilities at Chicago. While Mr. Lyford, at the present time, is representing the Chicago and Eastern Illinois, in the capacity of general counsel, he was previously, for several years, in the engineering and operating departments of this Road, and is one of the leading authorities on Chicago railway terminal affairs. His address is a valuable contribution on this important subject, and is herewith reproduced in full:

"There are 31 trunk lines of railroad reaching Chicago, owned by 24 separate companies. All of these lines come into terminals within an area about a mile square, in the center of the city. From this small center they radiate like the spokes of a wheel in every direction excepting due east.

"There are six passenger terminals, which collectively receive all through trains and, with the exception of the Illinois Central, all suburban trains. There are 56 freight stations in the down-town district, and 144 in the entire city. The railroads handle, in and out of the city daily, about 125,000 suburban passengers and 70,000 through passengers. They also bring into the city 260,000 carloads of freight per month, and take out about the same number, handling in and out about 17,500 loaded cars per day.

"I think I may safely say that only one of the passenger terminals in this city, the North Western, is in any sense permanent. All of the others have already outgrown their usefulness and will soon be entirely changed and rebuilt or combined on broader lines.

"The Union Station on the west side is to be replaced with a monumental structure in the same neighborhood. The Pennsylvania, Burlington and St. Paul, which use it, want to remain on the west side, and the people of this city are willing that they should do so.

"I predict that all of the other lines will join the Illinois Central in the magnificent station which it is about to construct on the lake front at Twelfth Street. That station should be capable of taking care of all of us for fifteen or twenty years, and if we should then outgrow it, some of us can move west of State Street, where we own ample property for a passenger station for all time.

"Certainly the new North Western Station, the new Union Station, and the new Illinois Central Station will have ample capacity to take care of the through passenger traffic of this city for many years to come.

"So long as the people on the west side want to keep two large passenger stations on that side of the river, we owe it to the traveling public to connect the west side stations with the Illinois Central and any other stations on this side of the river by direct surface or subway lines on which passengers can conveniently transfer from one station to another with their hand luggage and at a cost of five cents.

"The suburban passenger has no use for a monumental terminal station. He wants to reach all parts of the business district of the city, and for his purposes there should be a number of stations or covered platforms within the loop district, at any one of which he could stop, and at some of which he could transfer to any surface, subway or elevated line to any part of the city.

"A subway loop connecting all of the terminal passenger stations, for the sole use of suburban trains, has been suggested. It is utterly impracticable. All of the suburban fares collected on all of the railroads in this city would not pay the interest on the cost of a subway sufficiently large to carry all of these suburban trains. Excepting the Illinois Central and the North Western, all of the other roads are losing money on their suburban business now. The suburbanite cannot afford to pay materially higher rates than he is now paying.

"There is only one proper solution of the suburban problem, and this is the thought to which I wish to give prominence on the passenger question, namely, one of the subways which are proposed should be connected with all of the railroads at points outside of the business district. All suburban trains of the steam railroads should pass through the subway loop instead of stopping at the passenger terminals. A sane development of this idea will be the turning over by the steam lines of all their suburban business to the company which operates the subway, and by electrifying the suburban tracks, moving the subway trains out on the steam railroads through the suburban district. I have been advised by competent authority that this electrification will not cost more than $5,000 per mile of single track.

"Until the subways are constructed, the suburban trains could be transferred to the elevated roads at existing crossings of the steam lines, at substantially the same points I have named for connections with the subways. All suburban trains could then run at high speed on the steam railroads, and take their passengers to any point in the loop district or, by convenient transfers, to any part of the city on any surface, elevated or subway line. Two or three cents additional fare per trip would be the outside limit of increase from his present fare, and he would be given the privilege of universal transfer to any part of the city without extra charge.

"That the operation of electrified suburban trains on the same tracks with through passenger trains is feasible, has been proven by the experience of the New York Central Railroad at New York City. The wonderful success of the Interborough subway in the same city has established the practicability of operating high speed, ten-car, suburban trains through a subway loop.

"The subject of freight terminal facilities is far more important than the subject of passenger terminals. On account of the radiating lines of railroad extending in all directions from the congested center of the city, industrial centers have been built up in all parts of the city along these radiating lines. As a general rule, the only direct connections between railroads which interchange traffic at Chicago are at the hub of the wheel in the congested district bounded by Kinzie, Canal, Sixteenth Street and Lake Michigan.

"Of the enormous volume of freight traffic coming into this, the great railroad center in the world, 51 per cent is destined to Chicago, and 49 per cent passes through Chicago. Of the through freight, 70 per cent is now delivered directly by the inbound to the outbound line, and only 30 per cent is handled by belt lines. The 70 per cent which is directly delivered, passes through the congested part of the city, and is the cause of a large part of the smoke nuisance charged to the railroads and a large part of the congestion of downtown tracks.

"The elimination of carload transfers from the downtown district was first undertaken by the railroad companies because it was the easiest problem to solve. Its solution is at hand in the reorganization of the Belt Railway of Chicago, which was accomplished in November, 1912, and in the extension and improvement of the large yard at Clearing, which is now under way. Twelve railroads have entered into a lawful combination to solve this problem. All of the other roads will join them when they are ready to commence operations.

"The Clearing yard and its approaches and appurtenances will be completed by next October, and all interchanges of carload freight and empty cars will then be removed from the city. Each company with its own engines will take to Clearing solid trains made up of cars for other roads. At the Clearing yard these cars will be distributed by gravity into solid trains for each load. The same engine and crew which brings the miscellaneous train to the Clearing yard will return to its own road with a solid train to go out on its line.

"All empty cars will also be distributed into solid trains for the owning roads, and the Clearing yard will become a reservoir for empty cars.

"The place selected for the Clearing yard separates the western and northern roads from the eastern and southern roads, and is the natural point of interchange. The Clearing yard consists of a tract of land one-half mile wide and 3½ miles long, with the open avenue of the inner Belt connecting by the shortest possible route with every railroad reaching the city. The Clearing yard also connects at the west end with another Belt line, which will furnish another avenue for reaching every trunk line. In one or the other of these two belt lines, every railroad whose lines reach Chicago is financially interested, with the exception of the Chicago Great Western and the Alton, and the Alton is directly connected with the Clearing yard.

"The Clearing yard has been consolidated with the inner belt, and twelve railroad companies have secured the use of the combined plant for fifty years. Provision has been made to the extent of $50,000,000 for increasing the trackage and other facilities of the inner belt and Clearing yard, so that every railroad may have an open line of connection with the Clearing yard. The establishment of the Clearing yard makes possible another revolution in the freight handling facilities of this city, the effect of which will be more far-reaching and more advantageous to the people of the city than any change already suggested.

"The railroads daily bring into this city 10,000 tons and take out 15,000 tons of less-than-carload freight. Only forty per cent of the inbound freight is delivered to the consignee at the terminal station of the inbound road. Sixty per cent or 6,000 tons of freight per day is taken out of inbound cars at the terminal stations and transferred to other roads, the transfer being made as follows: By trap cars, 30 per cent, by teams 52 per cent, and by tunnel 18 per cent.

"Of the 9,000 tons of outbound l.c.l. freight originating at Chicago daily, and shipped from the outbound freight houses, 52 per cent comes to the house by trap cars, 28 per cent by teams, 13 per cent by tunnel, and 7 per cent by lighters on the river. The 41 per cent of outbound freight received by teams and tunnel leaves the city the same day and it is shipped from the industry. The 59 per cent received by trap cars and lighters leaves the city not earlier than the evening of the next day after it is shipped.

"The volume of l.c.l. freight which under present methods must be handled at the downtown freight terminals has already outgrown the capacity of the terminal facilities and the capacity of the streets leading to them. The result is an average delay of more than an hour for each team, and a congestion of downtown streets which has become unbearable.

"The use of motor trucks for station work is prohibited by the amount of dead time lost in reaching the station platform. The cost of team delivery of l.c.l. freight to and from the loop district exceeds an average of $1 per ton. For longer trips it reaches $2 per ton. Unless the shipper has direct access to the tunnel, private switch or lighters, he must deliver his freight for each road at its terminal station, generally requiring a separate trip to each station because of the street congestion and the delays at the station. Only a few large shippers have access to the tunnel, lighters or private switches.

"The average citizen must team his freight, at a cost to him of at least $1 per ton. Trap car, lighterage and tunnel charges are paid by the railroad companies. Mr. Brandeis, the present mentor of the Interstate Commerce Commission, has discovered this fact, and has decreed that this alleged discrimination in favor of the few large shippers who have access to the tunnel, lighter and private switch must cease. Whether we approve or not, the absorption of these terminal charges as a part of the transportation rate is doomed. I predict that within three months the shipper who is now enjoying this service free, will be paying at least $1 per ton for it. If he abandons this service, he must resort to teams, and the streets in the downtown district, which are already congested, will become absolutely impassable.

"While the shippers are facing this dilemna, the railroads are facing a greater one. The cost to the railroads of handling l.c.l. freight through the city of Chicago under present methods, is more than the profit derived from its carriage to and from the city. We are prepared to prove that on some classes of l.c.l. freight shipped, say, from Pittsburgh to Milwaukee, by way of Chicago, the cost of handling the freight within the city limits of Chicago exceeds the gross revenue charged for the entire transportation from Pittsburgh to Milwaukee.

"The volume of traffic at Chicago is increasing at the rate of five per cent per year, and as our terminal facilities are already congested, the cost of handling, per ton, increases with the volume. To acquire the necessary real estate in the downtown district to enlarge our terminal facilities along present lines, would cost from $20 to $40 per square foot, and even if the railroads could afford it, the city would not permit them to extend their Chinese wall in the congested district. The problem must be solved in some other way.

"After studying this great problem in all its phases for many months, we are prepared to suggest a remedy. It is not an untried remedy, but we have devoted much time and thought to its investigation and have discussed every phase of it with the men who are most competent to judge as to its practicability, having had years of experience in the actual handling of freight. They all agree that the l.c.l. clearing house will best meet the needs of both shippers and the railroads.

"The cities of St. Paul and Minneapolis have for several years enjoyed the facilities of an l.c.l. clearing house. First, the Minnesota Transfer Company was organized and established a crude transfer platform half way between St. Paul and Minneapolis, at which transfers of l.c.l. freight were made for all of the railroads. Later, the Hill lines, the Great Northern and Northern Pacific established clearing houses of their own, the Hamlin Transfer and the North Town Transfer respectively, at which was delivered all of the l.c.l. freight for each of these lines originating at either St. Paul or Minneapolis, the movement from the city to the transfer plant being made in trap cars miscellaneously loaded. Later, the Chicago, Milwaukee & St. Paul established a similar clearing house known as the Twin City Transfer, for its l.c.l. freight from these two cities. The results in each case have been a heavier lading of outbound cars and economy in handling.

"President Earling, of the Milwaukee lines, has stated that by the use of the clearing house the l.c.l. freight moving out of St. Paul and Minneapolis on his line is being handled in forty per cent less cars than were required under the old method which is in vogue in Chicago.

"We propose to establish in the vicinity of the carload clearing yard, a series of houses side by side, and all connected with each other by a cross platform. The several units as well as the cross platform will be equipped with moving sidewalks and each railroad company will lease and operate one or more units of the station, each unit consisting of one platform with its mechanical appliances for moving freight and with two railroad tracks on one side for loaded cars and five or six tracks on the other side for empty cars to be loaded in station order for destination.

"Instead of standing 100 to 200 cars at each downtown station, and allowing them to remain there all day, to be loaded for destination, we propose that all cars loaded in the downtown district shall be loaded to the roof, as trap cars, and moved to the clearing house as soon as loaded, instead of remaining all day in the downtown district. The 59 per cent of l.c.l. freight which now reaches the downtown station by trap car and lighter, will be sent directly to the clearing house, which it will reach in less than one-half the time now taken to reach the downtown house. The thirteen per cent of tunnel freight should also go directly to the clearing yard, either by tunnel or by trap car from some convenient tunnel station. This would wholly remove from the downtown station from 59 to 72 per cent of all the freight which now occupies it, and to that extent would increase its capacity for the legitimate business for which it is necessary.

"We then propose to double the capacity of the present downtown house by opening broad streets or driveways on each side of it, and placing the tracks under the streets and driveways, thus giving teams access to both sides of the house, instead of one side as at present, and also enabling the truckers to load into cars on both sides of the platform. The freight will be moved from the street level to the lower or track level by the use of the ramp, with mechanical appliances to regulate the speed of the truck which carries the freight.

"The congestion of downtown streets leading to the freight district will be removed by straightening the river, so that Franklin, Fifth Avenue and La Salle Streets can be opened through to the south, at least to Archer Avenue. We would add also to intermediate streets or driveways, 70 feet wide, leaving the buildings 60 feet wide, which is ample for station purposes and is an economical width for commercial purposes. The use of trap cars at the downtown station, and the loading of the nearest car to its full capacity, would eliminate all longitudinal trucking from the station platform, and would again double the capacity of the platform for handling traffic. The use of the clearing house for classifying freight would make possible the location of universal freight houses in every industrial district of the city. This would enable one shipper to take to one station all freight for all roads, thus materially reducing the number of teams or motor trucks required for this purpose. The freight would be moved in trap cars to the Clearing yard, and there redistributed and loaded for destination.

"All lighter freight would be carried by the lighters to one convenient point, and there loaded into trap cars which would be sent to the clearing house instead of being transferred, as now, to the downtown station. We should largely increase the lighterage service by establishing continuous docks along the straightened river or at street ends, from which freight would be taken to a convenient lighterage transfer for loading into trap cars for the clearing house.

"Lake freight also could be most economically handled at the Clearing yard. At the new city harbor north of the river, all l.c.l. freight not destined for team delivery in the central business district would be placed in trap cars and carried in full trains by the Northwestern to Clearing, or placed on lighters and carried on the river and drainage canal to Clearing or to the lighterage transfer.

"The South Chicago harbor is already connected with the Belt Railroad, of which the Clearing yard is a part, and all freight arriving at South Chicago would be transferred by rail to Clearing. Finally, we would recommend that the surface traction lines be authorized to move trap cars between 2.00 and 5.00 A. M. from surface side tracks to railroad freight yards, to be thence moved by the steam railroads to the Clearing yard.

"The efficiency of a clearing house depends upon the extent of its use . If only one-half of the l.c.l. freight of the city is handled in the clearing house, it is only 50 per cent efficient. If all of the freight is centered there, its efficiency is 100 per cent. The comprehensive plans which I have outlined contemplate 100 per cent efficiency.

"Assuming, as we must, that the absorption of existing lighterage trap car and tunnel allowances must be discontinued, we have gone far enough to feel assured that by the adoption of the Clearing system, the cost of handling and transporting l.c.l. freight to and from and through the city of Chicago will be reduced 50 per cent to the railroads and 75 per cent to the shippers.

"As to delay of freight, we are satisfied that package freight delivered at the downtown stations before two P. M. will leave the city for destination as early in the evening as at present, while freight delivered at the downtown houses after two P. M. will leave the city about six hours later than at present. On the other hand the much larger volume of freight which is now handled by trap cars and lighterage, and all of the transfer freight, will leave the city eighteen hours earlier than at present. While the downtown freight house is limited in its operations by the hours of the working day, the operations of the clearing house, to which the public has no access, will be continuous day and night.

"The clearing house opens up another possibility of tremendous importance to the shipper. The railroads will need for their purposes only the track floor of the clearing house for the handling of freight, and possibly one other floor for the clerical force. Ten-story warehouses could be constructed above the different units of the clearing house, and the cross platform which will connect them, and the space in such warehouses would be the most attractive and economical of any warehouse space in the world, being directly connected with platforms from which freight is being shipped to every part of the world."

Ordinance Passed for Chicago's New Union Terminal.

AN ordinance has at last been passed by the Chicago City Council, granting the railroads which now enter the Union Station, the right to construct new and extensive terminals according to plans set forth in the ordinance which among other things provides for the erection of a new passenger terminal at a cost of approximately $40,000,000, which will be used by the roads now using the Union Station, namely, the Pennsylvania, the Chicago, Burlington and Quincy, the Chicago, Milwaukee and St. Paul and the Chicago and Alton. The passenger station will comprise a monumental structure occupying the entire block bounded by Adams, Canal, Clinton and Jackson Streets, with a passage the full width of the block under Canal Street to the concourse and train shed, situated in the space between Canal Street and the river and extending both north of Adams Street and south of Jackson. In this respect the present plan follows the design originally prepared by D. H. Burnham and Company.

The freight terminal is to be for the use of the Pennsylvania Railroad only, and its location was modified in the later negotiations. As now provided for, it will be built east of Canal Street and south of Polk Street. Most of it will be north of Twelfth Street, but a part may extend as far south as Sixteenth Street.

In the provisions of the ordinances the railroads agree to co-operate in the straightening of the Chicago River south of Taylor Street, and to give property required in this straightening at a price fixed by arbitration. This enterprise will cost a large sum of money, but concerning it Mr. Arnold said: "The expense of changing the river would not only be more than fully realized by the railroad companies who now own practically all of the abutting property on both sides of the river, as far as it is herein recommended to be changed, but they would also profit greatly by the change." The companies also agree to a number of other related improvements, which with their respective costs, may be summarized as follows:

To widen Canal Street to 100 ft. between Washington and Twelfth Streets, with permission to locate two more tracks on the subsurface, $2,375,000; to build a viaduct 118 ft. wide in Twelfth Street, between Canal Street and the west bank of the river, $270,000; to construct an elevated roadway between the west and north sides of the city, the expense being divided with the Chicago & Northwestern Ry., $650,000; to build and maintain a new viaduct at Monroe Street when the city constructs a new bridge, $100,000; to widen all viaducts between Lake Street and Twelfth Street to the full width of the streets east of the river, $1,760,000; to grant an easement for Congress Street over the railroad property each of Canal Street, and to construct a viaduct the width of the street east of the river, $300,000; to build viaducts and rearrange approaches at Sixteenth and Fourteenth Streets, $400,000; to repair and maintain all the viaducts included in the foregoing, and to pay adequate compensation for all streets and alleys vacated. The list of expenditures recited above totals $5,855,000, and may correctly be considered as the compensation which the city has exacted for permission to the railroad to proceed with the improvements.

The expense of the entire terminal project is placed roughly at $65,000,000, which includes about $15,000,000 already spent for land. It is estimated that the work will employ 10,000 men for more than three years. The buildings involved in the entire project will contain an aggregate of 48,000,000 cubic feet. The train sheds will cover an area of thirteen acres, and will involve with the immediate trackage, 50 miles of new track. Including the viaducts, the plans call for the revamping of 16 acres of street space, in which about three miles of new sewer will have to be constructed. The general waiting room of the new passenger station will have 31,000 square feet of floor space. This is surpassed by only two stations in the world, Washington and Leipsic. The South Station in Boston, has 15,000 square feet, the Pennsylvania in New York 29,500, the New York Central in New York 20,000, Washington 35,000, St. Louis 19,000, Baltimore Union 7,000, Northwestern station, Chicago, 24,000, and La Salle Street station, Chicago 13,000.

No delays are foreseen in proceeding with the project and it is now expected that actual work will be started early in May. The railroads are allowed five years in which to complete the work. D. H. Burnham & Co., architects, are at work on the designs and will superintend the construction of the entire project.

Norfolk and Western's New Coal Pier at Norfolk.

THE Norfolk and Western has recently completed a large steel pier at Lamberts Point, which is to be employed for transferring coal from cars to vessels and is fully equipped for mechanical operation. There is already at this point a large storage yard with classification and other switching tracks, round house and locomotive facilities, two warehouses and three wooden coaling piers. Demands for increased facilities, however, have made necessary the construction of the new steel pier which has been built of such length that a vessel can be loaded therefrom with several classifications of coal, without moving. The new pier is 1,200 feet long, with double rows of pockets, making it possible to simultaneously load vessels on both sides. The accompanying illustration presents a general view of the complete structure.

The transfer cars employed in connection with this pier are equipped with electric motors and operated by trolley system. As each becomes loaded at the dumper, it passes to an elevator of ordinary but heavy construction by which it is lifted to the top of the pier ninety feet above the water. The car is then run to a position for dumping into any desired pocket leading to the vessel. The empty transfer car is then passed to the west end of the pier and from there is switched to an incline leading down through the center of the pier to the car dumpers again. By operating both car dumpers and twelve transfer cars, the pier can handle and load coal into a vessel at the rate of one hundred tons per minute.

Coal Loading Improvements at Baltimore.

PLANS have been completed for equipping the large coal pier in the Curtis Bay export terminal of the Baltimore and Ohio Railroad at Baltimore, with automatic telescopic chutes, to prevent the breakage of coal in loading shipments from the cars directly into vessels. The new device, which will be put in operation at Curtis Bay, for the first test in this country, will mark an advanced step in the method of loading coal, overcoming the annoyance of having coal broken, which has been unavoidable up to the present time.

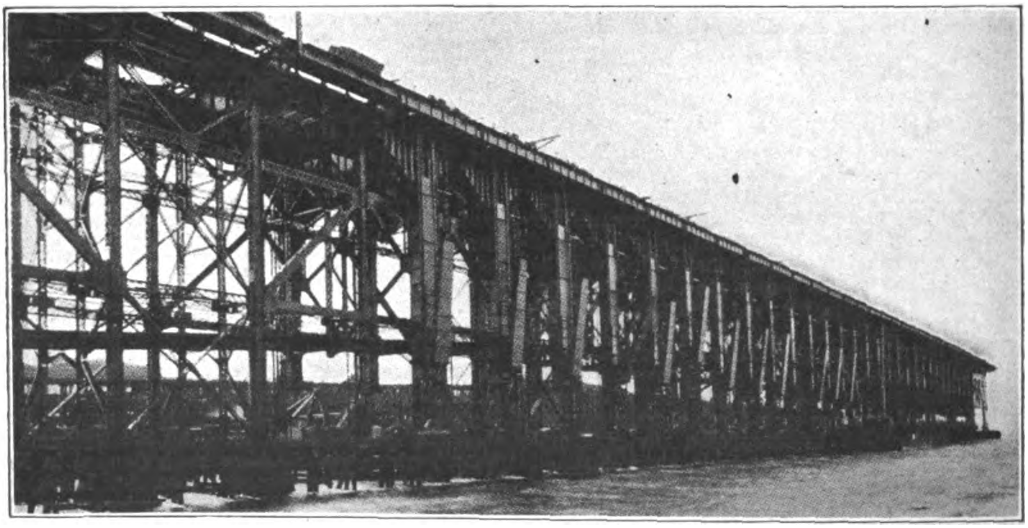
The automatic chute will be attached to the end of the pocket through which the coal passes when leaving the car, and, being adjusted to an easier angle, will overcome the force of gravity. The chute is collapsible in design, after the manner of the folding drinking cup, and carrying the coal to the hold of the vessel the chute folds up automatically.

It is also planned to attach a spiral chute to the Curtis Bay pier, designed to likewise eliminate breakage of coal. This latter chute will be installed as an experiment and will be watched with interest by coal operators and railroad companies.

With the new chutes in operation, it is believed that the new pier will be particularly well equipped to meet the requirements of foreign coal users, who prefer large-lump bituminous fuel.

Proposed Electrification on Canadian Pacific.

WESTINGHOUSE, CHURCH, KERR AND COMPANY, of Montreal and New York, have been retained by the Canadian Pacific Railway as engineers to investigate the matter of the proposed electrification of the new double-track, 5½-mile Selkirk Tunnel in British Columbia. The investigations will cover in general the type of system to be installed, the relative economies of steam and water power and the effect of the electrification upon operating conditions.



THE NEW COAL PIER OF THE NORFOLK AND WESTERN RAILWAY AT LAMBERT'S POINT TERMINAL.

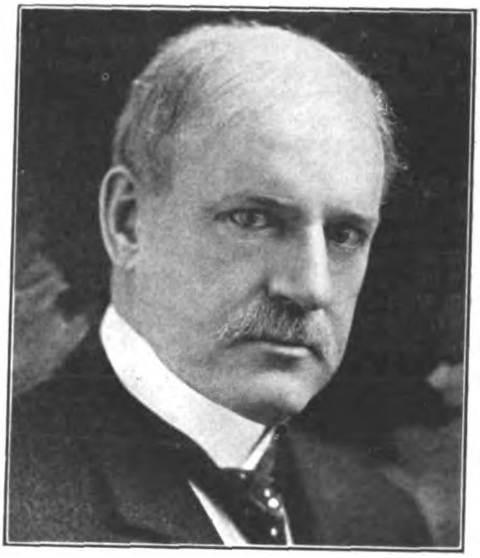
Interstate Commerce Commission

The Commission's New Chairman.

FOLLOWING the precedent established some years hence, to annually appoint a new chairman, Commissioner James S. Harlan has been selected for this honor during the current year, succeeding Chairman Edgar E. Clark.

Mr. Harlan, who was born in Evansville, Ind., in 1861, became a member of the Interstate Commerce Commission in August, 1906. His father was John Marshall Harlan, a Justice of the United States Supreme Court until his death in 1911. He is a graduate of Princeton University and was admitted to the bar in 1886, and in the same year became a member of the firm of Gregory, Booth and Harlan, which later became Harland and Harlan. In 1901 he was appointed attorney-general of Porto Rico, a position he held for two years, and in 1906, as above mentioned, he was appointed by President Roosevelt to the Commission.

Both on account of his training and experience, Commissioner Harlan should make an unusually able and satisfactory chairman, and this opinion is being justified in the manner in which he is conducting the advance rate case, undoubtedly the most important procedure which has yet come before the Commission. On a just decision depends not only the prosperity of the railways, but, to a large measure, the prosperity of the entire country, and the chairman's questions, put to witnesses and lawyers from time to time, indicate plainly an effort to separate the essentials from the non-essentials, and a desire to confine, so far as possible, the issue to the main points involved.



JAMES S. HARLAN.

Recent Appointments to the Working Force.

FRANK H. ADAMS, who until recently has been engineer of shop extension for the Santa Fe System, has been made staff mechanical engineer in charge of the valuation of motive power for the Commission in connection with the physical valuation of railroads. Mr. Adams' territory will embrace all the railroads in the Western District composed of North and South Dakota, Nebraska, Kansas, Oklahoma, Texas, New Mexico and a portion of Arkansas and Louisiana. His duties will be to supervise the valuation of motive power, rolling stock, shop machinery and tools.

Mr. Adams began service with the Santa Fe on the Gulf Lines on February 1, 1891, in Galveston, Texas, as chief mechanical draughtsman, and later was transferred to Cleburne to superintend the arrangement and installation of the equipment of the shops then nearly completed. On November 1, 1901, he was promoted to the position of engineer of shop extension with headquarters at Topeka, Kansas.

Morris A. Zook.

MORRIS A. ZOOK, recently appointed Resident Engineer, Division of Valuation, Interstate Commerce Commission, with office at Washington, D. C., was born March 2, 1859 at Philadelphia, Pa. He graduated as civil engineer from the Pennsylvania Polytechnic College in 1879, after which he entered the service of the P. B. & W. R. R. as draftsman in the car shop at Wilmington, Delaware.

After a few months of this service he became, successively, assistant engineer, resident engineer, chief of location on the Shenandoah Valley and the Norfolk and Western Railroads.

In 1883 he entered the service of the Pennsylvania Lines West, being successively assistant construction engineer; chief engineer, Indianapolis Union Railway; engineer, M. of W., Indianapolis and Vincennes Railroad; and engineer, M. of W., Chicago Division, St. L. & P. R. R.

In 1890 he entered the service of the L. N. A. & C. Ry. (Monon Route) as engineer of M. of W. and later becoming superintendent of the same line.

In 1892 he became engineer, M. of W., of the Queen and Crescent in which position he continued until 1898 when he became, successively, engineer, M. of W. and engineer of the L. E. & St. L. C. R. R.

In 1902 he was engineer in charge of reconstruction of the L. & S. Division of the Central R. R. of N. J.

In 1904, after twenty-five years of continuous railroad service he retired to take up independent work as a consulting engineer. In this capacity he engaged in numerous important works as follows:

(a) Chief engineer in charge of location and construction of railroad lines for Peabody Coal Company.
(b) Valuation of N. Y., N. H. and H. R. R.
(c) Special engineer in charge of location of Havanah Central R. R. from Havanah to Cienfuegas, Cuba.
(d) Valuation of railroads in Montana.
(e) In charge of rehabilitation work, Chicago and Great Western R. R.

(f) Valuation eastern lines, Canadian Pacific Railway.
(g) Valuation of railroad lines in Missouri and of joint lines, Wabash Railroad in Canada.

Mr. Zook is a member of the American Society of Civil Engineers and of the American Railway Engineering Association.

Charles H. Spencer.

CHARLES H. SPENCER, engineer of the Washington Terminal Company, Washington, D. C., has been appointed assistant district engineer of the Eastern District, Division of Valuation, Interstate Commerce Commission, with office at Washington.

Charles H. Spencer.

Mr. Spencer was born May 7, 1867 at Detroit, Michigan, and was graduated from the University of Michigan in 1896. He began railway work in March, 1897, with the Lake Shore and Michigan Southern Railway as rodman. During 1898 he was transitman for that road. From 1899 to June, 1900, he was chief draftsman and assistant engineer, M. of W., for the Southern Indiana Ry.

From January, 1900, to July, 1903, he was successively, chief draftsman to the engineer of construction and assistant engineer in charge of construction on the Baltimore and Ohio Railway, West of Pittsburgh.

In July, 1903, he became resident engineer in charge of construction, the Washington Terminal, Washington, D. C., in which position he continued until the completion of that work when he became engineer at the Washington Terminal in charge of the Maintenance of Way Department.

Mr. Spencer is a member of the American Railway Engineering Association, Railway Signal Association, American Railway Bridge and Building Association and for the past three years has been chairman of the Committee on Yards and Terminals in the American Railway Engineering Association.

B. T. Elmore.

B. T. ELMORE, recently appointed engineer of roadway and track for the Eastern District, Division of Valuation, Interstate Commerce Commission, with office in Washington, D. C., was born December 14, 1866 near Mobile, Ala. He graduated as a civil engineer from the University of the South, at Sewanee. He began railroad work in January, 1886, and from that time until March, 1899, was employed as rodman, transitman, draftsman, masonry and tunnel inspector, assistant engineer M. of W., resident engineer on preliminary and location surveys. Resident engineer on new construction and revision of alignment and grades on various railroads in Alabama, Georgia, Tennessee, South Carolina, Virginia, West Virginia and New York. From 1899 to 1901 he was resident engineer on surveys and construction on the B. & O. S. W. Railroad in Indiana; in 1901-1902 assistant engineer on grade revision St. Louis-Louisville Lines for the Southern Railroad in Indiana and Illinois. October, 1902, to February, 1914, locating engineer, engineer of surveys, assistant chief engineer and division engineer for the Virginian Railway, having charge of surveys and construction of the greater part of the Virginian Railway and branches.

Mr. Elmore is a member of the American Railway Engineering Association.

Warrick R. Edwards.

WARRICK R. EDWARDS, assistant engineer of bridges, Baltimore and Ohio R. R., has been appointed senior structural engineer of the Eastern District, Division of Valuation, Interstate Commerce Commission, with office at Washington.

Mr. Edwards was born at Kirkwood, Mo., February 8, 1869. He graduated from Washington University, St. Louis, with the degree of Bachelor of Engineering in 1888, and entered the service of the Bridge Department of the City of St. Louis, where he remained until June, 1889. He then entered the service of Mr. George S. Morison, consulting engineer, as rodman on the construction of the Mississippi River Bridge at Memphis, afterward serving as shop inspector on superstructure of this bridge.

In 1892, he was employed as draftsman in the Bridge and Construction Department, Pencoyd Iron Works. He again entered railway service in June, 1894, with the Bridge Department of the Baltimore and Ohio R. R. where he remained continuously, holding the positions of inspector, assistant to the engineer of bridges and buildings, assistant engineer in chief, bridge draftsman and assistant engineer of bridges.

Mr. Edwards is a member of the American Society of Civil Engineers, the American Railway Engineering Association, the American Society for Testing Materials and the American Railway Bridge and Buildings Association.

Thomas B. Purves.

THOMAS B. PURVES, who has been appointed senior mechanical engineer for the Eastern District, Division of Valuation, Interstate Commerce Commission, with office in Washington, D. C., was born January 4, 1858, at

East Albany, N. Y. After receiving an academic education, Mr. Purves entered the service of the Boston and Albany Railroad as a machinist's apprentice and during his years of apprenticeship studied mechanical engineering under the direction of his father, who was at that time master mechanic of the Boston and Albany Railroad, which position he occupied for a period of forty years. At the close of his apprenticeship, Mr. Purves served several months as locomotive fireman in order to obtain experience in locomotive operation. He was then promoted, successively, to engine house foreman, general foreman and master mechanic, and finally to the position of superintendent of motive power and machinery, which position he resigned in 1904. During his service with the Boston and Maine R. R., he was elected to represent that company on the Board of Appraisal in determining the value of the Fitchburg Railroad, later leased by the Boston and Maine and his work in this connection received the marked approval of the presidents of both companies.

In 1906, Mr. Purves accepted a position with the Denver and Rio Grande R. R. as superintendent of motive power and machinery, which position he occupied until 1909 since which time he has been engaged with the Board of Railroad Commissioners of Massachusetts on the appraisal of the motive power and equipment of the New York, New Haven and Hartford R. R. Co., and of the Eastman, Heater Car Company and the Boston, Revere Beach and Lynn Railroad Company, for which work he proved to be peculiarly well fitted.

Examinations for Inspectors of Safety Appliances and Hours of Service.

THE United States Civil Service Commission announces open competitive examinations for inspector of safety appliances and inspector of hours of service for men only, on April 24th and 25th, 1914, at various important cities throughout the United States. From the register of eligibles for these examinations, certification will be made to fill vacancies in these positions at salaries of $1,800 per annum, with necessary allowances for expenses incurred while absent from headquarters in the discharge of official duties. It is expected that several appointments will be made to each position.

The duties of the Safety Appliance Inspectors will comprise the making of inspections and reports as required by the Safety Appliance Acts; the duties of the Hours of Service Inspectors will be the making of inspections and reports as required by the so-called Hours of Service Act. Both Safety Appliance and Hours of Service Inspectors may be required to investigate accidents as required by section 3 of the Accident Investigation Act of May 6, 1910.

Applicants must have reached their twenty-fifth, but not their fiftieth birthday on the date of the examination.

Applicants must be physically qualified to perform the duties required in these positions. An applicant whose medical certificate on the application form indicates that he is not in sound physical health will not be admitted to examination.

It must be shown in connection with his application that each applicant is (a) a person of good moral character and habits, active, intelligent, and discreet; (b) of good speech and manner, and qualified to address and confer with railroad officials and employes as occasion may require.

An applicant for the position of Inspector of Safety Appliances must have had at least eight years' experience in steam railroad service as conductor, engineer, trainman, yardman, fireman, or yardmaster, or at least five years' such experience as manager, general or division superintendent, trainmaster, master mechanic, master car builder, general car foreman, road foreman of engines or air-brake supervisor, and must within two years next preceding the date of his application have been in active service in one or more of the capacities mentioned, or as an inspector of steam railroad equipment under the Government of the United States or any State or Territory, provided he has had experience in any one or more of the positions above referred to.

An applicant for the position of Inspector of Hours of Service must have had at least eight years' experience as trainmaster, yardmaster, train dispatcher, telegraph operator, block signal operator, conductor, engineer, fireman, trainman, or yardman, or at least five years' experience as manager or as general or division superintendent, and must within two years next preceding the date of his application have been in active service in one or more of the capacities mentioned, or as an inspector of steam railroad equipment under the Government of the United States or any State or Territory, provided he has had experience in any one or more of the positions above referred to.

No person interested either directly or indirectly in any patented article required to be used on any locomotive or car under inspection, or who is intemperate in his habits, shall be eligible for appointment to either of these positions.

Commission May Curb Parcel Post.

IN response to resolutions adopted and forwarded to him by the Merchants' Association of New York, protesting, and asking his assistance against such further extension of the parcel post as would deprive the merchants of the service now furnished by the express companies, Commissioner E. E. Clark intimates that the Commission may, in the future, exercise its prerogative to prevent harmful proposals of the Postmaster-General. The Commission's letter is as follows:

"I have yours of the 12th, enclosing pamphlet issued by your Association 'against further extension of the parcel post service.' You say that you send this 'inasmuch as the Interstate Commerce Commission is charged by law with certain powers of review of the action of the Postmaster General relative to the scope and rates of the parcel post service.'

"In order that there may be no misunderstanding, I call attention to the fact that that statement of our powers is not quite correct. We have no power to review any action of the Postmaster General. He is required to secure the consent of the Commission to proposed changes in the regulations governing the rates, weight, limits, zones and conditions of mailability under the parcel post. The power of the Commission seems clearly to be limited to either granting or withholding that consent.

"The views of your Association are entitled to careful consideration and great weight, and I thank you for sending these expressions to us. They will have full consideration in any connection where they are applicable."

LEGISLATION.

Government Ownership of Telephone and Telegraph Lines Again Recommended.— The Postmaster-General has made public an elaborate report prepared for him by a special committee charged with that duty, in which it is stated that the telegraph and telephone systems have long been recognized as necessary adjuncts to a complete postal service and recommending that these lines be taken over by the Federal Government.

Theodore N. Vail, president of the American Telephone and Telegraph Company, in the annual report to stockholders made public a few days after the publication of the Post Office Department's special report, sums up the attitude of his company towards this subject in the following manner:

"Our opposition to Government operation and ownership is not based on pecuniary, partisan, prejudiced or personal reasons. It is because of our interest in the upbuilding of a great public utility and its preservation.

"We are opposed to Government ownership because we know that no Government owned telephone system in the world is giving as cheap and efficient service as the American public is getting from all its telephone companies. We do not believe that our Government would be any exception to the rule."

He states that the common impression that the Postmaster General has made a report favoring the acquisition of the wire lines is erroneous. It is not a departmental report, he says, but merely the conclusions of three officials of the Post Office Department, transmitted without comment by the Postmaster General.

As to possible Government purchase, Mr. Vail quotes Congressman Lewis, the Congressional exponent of Government ownership, to the effect that there is no water in the Bell capitalization; and urges the stockholders not to be induced to part with their holdings through fear of confiscation.

He shows that there is a deficit in all government-owned systems and says that every telephone system in the world adopts the Bell system as a standard, uses the Bell operating methods and either uses Bell apparatus or copies it. And yet there is not one, he continues, that gives an approximation to the facilities that the Bell system gives or gives as good or as cheap service, all past prophecies to the contrary notwithstanding.

"These deficits are not the result of a definite policy to give a cheap service to individuals at the cost of all, but are due to errors in management such as underestimates of values and cost of new construction; disregard to maintenance, depreciation and particularly of obsolescence; impossible theories of operation, and a mistaken policy founded on promises, prophecies and assertions exactly the same in character as those now being used to bring about Government ownership in this country, and upon a failure to understand and appreciate the advantages of private as distinguished from government organization.

"There are no sound reasons given," says the report, "or real advantages promised for government ownership and operation which do not apply to or cannot be secured by government regulation.

"Private initiative, invention, risk, spurred on by the incentive of reward, have changed the face of the world, and the resulting unearned increment largely constitutes the wealth of nations; without it many of the great scientific industrial developments would have remained scientific curiosities, even if they had been evolved at all."

The advantages of one telephone system are clearly set forth, as are the differences between the exact technical knowledge required for operation and the judicial ability necessary for regulation.

"Government administration," the report says, "is more or less a game of politics, and while with Government operation it may sometimes be possible to have efficiency, it will always be impossible to have economy."

The Economic Waste of Full Crew Laws.—A number of railroad officials appeared before Governor Glynn, of New York, during the early part of March in an effort to procure his favorable consideration of the repeal of the full crew law which has caused the railroads of that State $596,000 of useless expense since September 1st, last, or at the rate of $1,200,000 a year. In presenting the case for his system, President A. H. Smith, of the New York Central Lines argued in part, as follows:

"It must be apparent to all that the stipulation by law of the number of men who shall be placed upon a train which is a variable quantity and subject to variable conditions, will necessarily leave such mediums of transportation either under-manned or over-manned, and take away from the officer in charge the opportunity of exercising that judgment which is essential to securing proper results.

"Any man who is placed by law in a position where it is apparent to himself and fellow-workers that his services are unnecessary, is a menace to maintenance of proper discipline.

"The economic waste which has resulted from the enactment of this measure will fall as a burden upon the people, because in the last analysis the means of meeting the expense of such a requirement must be provided by the people.

"These railroads cannot go on and maintain their physical condition and keep pace with the natural business growth of the country unless the constant drains upon its resources are stopped or met by a corresponding increase in income sufficient to offset the expense incidental to such requirements.

"There will come a time when, if these increasing burdens continue to be placed upon the railroads, their physical strength as well as ability to render the service required of them, will be seriously impaired; and it must be evident to every thinking man that any diminution in the utility and efficiency of these great properties will, in the end, react not only upon the people served by them, but upon the entire business community.

"You have a Public Service Commission that represents the people, which is qualified to determine the matter of manning trains and to that body should be left this important question."

To Consolidate Trust Bills.— Reports from Washington state that the President has put his stamp of approval on the four bills to amend the anti-trust laws which the House Judiciary Sub-committee on Trusts submitted to him in a virtually final form. These bills, it is understood, will soon be reported to the House. President Wilson indicated his belief that it would be better to consolidate all the bills into one in order to expedite legislation. He insisted that the personal guarantee of individuals in control of corporations should be prescribed in every bill in order to break up the evils that have grown up under the present anti-trust laws.

The holding corporations bill would make unlawful those holding companies that combine the stock of corporations so as to lessen competition, but would not affect companies that hold the stock of corporations that form essential parts of their business. Holding companies that are entirely for investment and not for business directly, are not prohibited. This would permit companies like the big insurance companies to hold the stock of corporations which are not competitors. None of the four bills, as now framed, provides for exemption of labor unions from anti-trust prosecutions.

The trade relations bill prohibits manufacturers from contracting to prevent a merchant from handling a competitor's goods. It prohibits final price fixing to the consumer, though it permits the manufacturer or wholesaler to fix the price at which goods shall be sold in the first instance, as from manufacturer to jobber. Under this restriction, the first sale of a manufactured article by its producer would be at the same price everywhere, plus the cost of transportation. This bill gives the right of injunction to individuals for threatened loss or damage, and the right to make use of a Government decree against any corporation.

The interlocking directorates bill includes a provision to prohibit directors in various corporations selling to companies in which they are directors. The definitions bill embodies such definitions as seem not to have been covered by decisions of the courts.

President Underwood on Interlocking Directorates.—In a published statement relating to the proposed legislation to abolish interlocking directorates, F. D. Underwood, President of the Erie Railroad, has had the following to say:

The subject of interlocking directorates has been given undue prominence. There is yet to be shown an instance where damage has been done to stockholders, property or the public, through the medium of interlocking directorates, which is largely a bogie. The whole matter has been distorted and exaggerated. The fact that the Interstate Commerce Commission is vested with the power whereby the financial and other operations of the railroads are rigidly supervised minimizes the importance of directors. We can all agree that the principle that those who borrow or buy and those who lend or sell should not be vested in one individual.

The bill now under consideration goes beyond that, in that it denies the shareholders of a railroad their right to be represented by any person who is a director or officer of a bank, although the bank may have no dealings with the railroad company. This would appear to be an attack upon the rights of railroad stockholders, unjust in principle and discriminatory in character. It is natural for the shareholders of railroads to seek representative men to have charge of their property, and inasmuch as representative men are not infrequently bankers, the unfairness of the proposition is apparent, and this applies especially to foreign shareholders, whose only recourse is to have their interests protected and represented by men identified with their banking connections. On the other hand, banks are at times large creditors of railroads, and in that case it is but natural that they should seek to have a representative on the Board for obvious reasons. In the case of manufacturing concerns, its creditors are entitled to representation on its Board. Why discriminate as against railroads?

The bill further provides that no person who is interested personally, or who is a director or officer in the mining or selling of coal, shall be a director of a railroad company; for example, a person might be interested in the mining or selling of anthracite coal in Pennsylvania. At the same time he might be a shareholder of a railroad operating west of the Missouri River, and by reason of his being a shareholder entitled to a seat in its Board. It would be quite impossible for a railroad located as above stated to have any dealings, either directly or indirectly, with any anthracite coal operators.

It all comes back to the character of the directors. Men who are qualified to be directors are not over plenty, and must be men of probity and business experience. To deprive the shareholders of the services of such men is an arbitrary and unfair proceeding, not warranted by any past or impending conditions.

New York Chamber of Commerce Deplores Further Governmental Interference with Business.—A Committee of the Chamber of Commerce of New York, composed of leading business men of that city, has prepared a report which has been transmitted to the President of the United States and to Congress in which it is declared that "what business men generally desire, what industry most needs, is the certainty of a period of rest for the peaceful readjustment of all enterprise that is inconsistent with the accepted principles of law and ethics, and for the energetic advancement of all individual endeavor, free of any sense of repression, secure in a sense of liberty of action, and guarded from the danger that the disclosure of personal prerogative and private achievements would entail."

The report is issued in accordance with the action of the Chamber of Commerce, taken at a largely attended meeting held February 19th, the Committee being instructed to put the view of the Chamber in the form of a brief that would state the underlying principles that should govern the regulation of business. Speaking of the right of individual initiative and the danger of arbitrary interference with the right of the individual, the report says:

"The spirit of unrest has been said to largely spring not alone from unequal conditions of life but from what has been called the unequal distribution of wealth.

"Undoubtedly what has been meant is the unequal acquisition of wealth, but there will always be unequal acquisition of wealth as long as there is unequal distribution of brains, industry and thrift, and those are qualities of mind and character which no statutory laws can regulate or control, but the beneficent exercise of which unwise law can greatly restrict and discourage.

"Men having those qualities have ever been able to see and grasp opportunity, and men using them conscientiously have ever secured recognition among their fellows.

"To shackle the genius of this country, to limit individual freedom and initiative within the confines of parental government direction other than the well-defined limits now understood and recognized as inconsistent with moral law, modern ethics, and the public welfare, would be to set brakes upon the splendid spirit of our people by which all our achievements have been inspired, if not indeed to break down the march of progress, and to force us to the rear in that international contest for the world's business by which alone this country can continue to grow and reach the fruition of which there has heretofore been such ample promise."

Speaking of the general desire of business to conform with the provisions of the Sherman Law, the report states:

"It is a matter of public knowledge that those whose affairs are not yet in harmony with the interpretations of that law are voluntarily seeking to readjust their affairs in consonance with it without the expense, delays and convulsion created by legal processes."

The report of the Committee closes with a recommendation for the adoption of the following resolution:

"Resolved, That the Chamber of Commerce of the State of New York urges upon the President and upon the Congress of the United States that ample time be given for the consideration and discussion of these new proposals by all the people of the country, that provision should be made for taking testimony from business men and business organizations throughout the country whose activities prevent their appearing at Washington to express their views, and that whatever legislation may be formulated, action thereon be deferred to a later session of Congress, in order that there may be sufficient time for a clear apprehension and thorough discussion and a complete expression of opinion throughout the country, to the end that what shall finally be determined upon may be the product of mature judgment, and may be likely to inure to the benefit and not to the disadvantage of the interests of all the people."

President Loree on Interlocking Directorates.—On March 5th, L. F. Loree, president of the Delaware and Hudson Railroad, appeared before the House Judiciary Committee at Washington to protest against legislation which proposes to prohibit interlocking directorates among railroads and other large industrial corporations. Mr. Loree told the committee that the great railroad problem now is to make life as secure as possible.

"The board of directors is the connecting link between the multitude of corporate owners and the corporate property, the sole means by which the former exercises over the latter the ordinary rights of ownership," he said. "Any curtailment of the ordinary rights of a corporate owner freely to choose those whom he will support for directors and to vote for any person by whom he may wish to be represented in the directorate is a restriction on the power of owners to control their property.

"Every curtailment of ordinary ownership rights must reduce the attractiveness of the investment and so impair ability to obtain needed capital. The process may go far enough to cripple seriously the industry affected. The United States is not yet free from the need of resorting to foreign money markets to secure capital in excess of that their own citizens are able to furnish. In every such case the appeal for foreign support must be made through persons who have the confidence of the foreign investors or bankers."

President Loree said insurance companies, savings banks, trust companies and even endowed universities and charitable institutions are investors in American railroads, and if they are denied the right to place their authorized agents on the directorates as they find it convenient, they will regard the investment as less desirable.

Ralph Peters Opposes Five Cent Fare Limit for Steam Roads within New York City.—Ralph Peters, president of the Long Island Railroad has sent a letter to the Speaker of the New York Assembly and to the Lieutenant Governor of the State protesting against Senator Griffin's bill amending the railroad law so as to require a five-cent fare upon steam railroads within New York City, on the ground that the proposal is confiscatory and suggesting that the matter could be dealt with more properly by the Public Service Commission, which was created for that purpose.

The Long Island Railroad handled more than 40,000,000 passengers in 1913 with an average haul of less than fifteen miles and an average revenue of less than fifteen cents. If the amendment goes through, according to Mr. Peters, it will mean a loss to the road of more than $1,000,000 a year. The company operates 92 miles of steam road within the city. For the year ended December 31, 1913, the company showed a deficit of $977,984, as against $282,690 for 1912, and $657,955 in 1911.

Minimum Full Crew Laws.—On October 17th, the Special Committee on Relations of Railway Operation to Legislation, issued a bulletin containing an analysis and the text of the laws affecting the size of trains or switching crews, which have been enacted in the various States. This committee, from subsequent correspondence with the various railways of the country, has now ascertained the number of trains affected and the cost of this legislation to railway operation. In response to its inquiry, asking for information of this character, 163 roads having a mileage of 202,369 miles, replied. Of these, 65 roads, operating 31,673 miles, are not affected by this legislation, the other 98 roads report a total of 2,359,368 trains affected and a total estimated cost per annum of $6,800,729. The committee's statement is accompanied by the following interesting table showing the extent of the cost per annum to the railroads in the States involved in complying with these full crew laws.

MINIMUM (FULL) CREWS.

Estimated number of trains per annum affected by State Laws.

States having laws which affect train or switching crews.	No. of roads.	Freight.	Passenger.	Switch.	Other Trains	Total
Arizona	5	16,727	10,330	......	721	27,778
Arkansas	10	65,821	12,297	20,365	1,063	99,546
California	6	22,500	48,303	312	24	71,139
Connecticut	..	......	......	......	......	......
Indiana	23	73,353	58,410	11,647	1,938	145,348
Kansas	..	......	......	......	......	......
Maine	1	......	......	1	......	1
Maryland	8	49,873	52	......	......	49,925
Missouri	10	44,653	18,382	......	......	63,035
Nebraska	3	1,240	6,665	......	......	7,905
Nevada	4	1,036	820	365	624	2,845
New Jersey	9	128,911	121,764	1,392	1,090	253,157
New York	17	397,055	154,627	10,470	32,796	594,948
North Dakota	1	60	......	......	312	372
Ohio	16	23,138	39,456	14,307	......	76,901
Oregon	4	10,026	1,077	......	......	11,103
Pennsylvania	22	443,366	216,741	4,745	1,249	666,101
South Carolina.	1	27,348	22,088	13,740	4,512	67,688
Texas	5	79,660	35,919	1	1,013	116,593
Washington	6	57,149	13,955	......	6,829	77,933
Wisconsin	6	......	26,737	......	313	27,050
Total		1,441,916	787,623	77,345	52,484	2,359,368

Estimated cost per annum of compliance with State laws

	No. of roads.	Freight.	Passenger.	Switch.	Other Trains	Total
Arizona	5	$59,618	$19,016	$......	$1,322	$79,956
Arkansas	10	184,547	19,404	80,312	3,837	288,100
California	6	60,604	82,093	976	72	143,745
Conn.	..	......	......	......	......	......
Indiana	23	188,069	112,583	41,729	6,524	463,905*
Kansas	..	......	......	......	......	......
Maine	1	......	......	603	......	603
Maryland	8	107,397	123	......	......	107,520
Missouri	10	232,649	63,926	......	......	407,221*
Nebraska	3	4,464	14,142	......	......	18,606
Nevada	4	3,690	2,595	1,314	5,000	12,599
New Jersey	9	231,113	150,841	5,763	1,606	389,323
New York	17	1,074,949	287,853	36,711	125,060	1,524,573
N. Dakota	1	300	......	......	1,200	1,500
Ohio	16	46,432	88,467	49,428	......	209,327*
Oregon	4	42,435	3,327	......	......	45,762
Penna.	22	1,222,372	323,752	10,139	4,789	1,561,052
S. Carolina	1	75,207	57,637	41,220	13,701	189,765
Texas	5	791,218	243,636	......	82	1,034,936
Washington	6	237,419	22,245	......	22,106	281,770
Wisconsin	6	......	39,386	......	1,080	40,466
Total		$4,562,483	$1,533,026	$268,195	$186,379	$6,800,729*

*Details which comprised totals were not reported by some roads.

Extraordinary Action by New Jersey Legislation on Railway Passes.—If any railroad in New Jersey refuses to carry free within the State of New Jersey practically every office holder and many minor State employes, it shall be fined $10,000 for each such person ejected from trains after a refusal to pay fare—and this notwithstanding that the Supreme Court has decided upon constitutional grounds that a large proportion of these persons are not entitled to free transportation. If any railroad challenges the law to compel it to carry these persons free, and the challenge is sustained, the General Railroad Act, by which all railroads of New Jersey are regulated, and under which all railroad corporations within the last forty years have been formed, shall automatically be repealed and the charters of all railroads in the State incorporated under that Act shall become null and void.

The above, in a nut-shell, is what the substitute reported by the Judiciary Committee for New Jersey Assembly Bill No. 368 would provide for if enacted into law.

This Bill would make mandatory in New Jersey a practice absolutely forbidden by Federal law, and by the law in most of the States in the Union, and which is criminal in the State of New York. Its introduction follows a request made by the railroads that 137 officers and employes of the State, who, under a recent decision of the Supreme Court, were not entitled to ride free, should pay the proper railroad fare just as office holders in other States do, and as other citizens of the State of New Jersey do. The Bill gives a long list of the State positions for the holders of which it would provide free transportation in that State, adding somewhat to those mentioned in previous statutes.

While time of the legislators has been devoted to the introduction of such a ridiculous measure as that described above, the railroads have been unable to secure a respectful hearing in the New Jersey Senate or Assembly for their petition to repeal the Extra Crew Law, a measure that causes a wasteful expenditure on the part of the railroads in New Jersey. The railroads in the State have also been unable to secure the introduction of a Bill to repeal the State law compelling them to carry certain office holders as passengers free of charge.

Federal Regulation of Railway Securities.—B. F. Yoakum, chairman of the Frisco Board, has addressed the chairman of the Congressional Committee on Interstate and Foreign Commerce in response to the suggestion that he should express his views on a law requiring the approval of the Interstate Commerce Commission of securities issued by railroads. Mr. Yoakum said: "As long as fourteen years ago, I filed a document with the Interstate Commerce Commission, suggesting a plan for co-operation between the Government and the railroads. I am still of the same opinion, and believe the time is opportune for the establishment of closer working relations. There is no doubt as to the advisability of railroad securities being subject to the approval of some one established authority, either the Federal Government or the different States, some of which now have laws supervising their issuance. The approval of the Government would be preferable as to interstate railroads, and would simplify the work, both for the Government and the railroads. It would obviate the multitude of divergent views that might arise as to the necessity of issuing securities to carry on the work of development, additions and betterments asked for by interstate carriers.

"Together with the federal approval of securities there should be also a way found to establish effective co-operation between the Government and the railroads. Among other things this would lead to cheaper money for the railroads for the improvement of their property and facilities, and would enable them to more economically handle their freight and passenger business. The price of money to the railroads is just as much a factor in the cost of transportation as the price of coal and other things they must buy in conducting their business.

"If the government should approve a railroad security, it would in effect, morally speaking, indorse it, and this high approval of the issue should make such a bond sell at the lowest rate of interest current for gilt-edge securities, thereby reducing the cost of transportation. A quasi co-partnership without risk or cost to the government might be established through a federal license or charter involving a profit-sharing plan for such interstate railroads as prefer to operate under federal charter. A national charter need not interfere with the authority of State Railroad or Public Utility Commissions in supervision of interstate business, or State regulation, except as to the issue of interstate securities. These would come under federal supervision only, and the government would participate in the profits of the road under an equitable profit-sharing plan. The profits thus accruing to the government could be distributed for the benefit of the various communities served by such railroad, as for example, the up-keep of improved public highways."

ORGANIZATION NOTES.

Signal Honor Paid American Engineer by Foreign Organization.—The International Exhibition at Leipzig, Germany, has made its highest award and given a gold medal to Gustav Lindenthal, chief engineer of the East River Bridge Division of the New York Connecting Railroad, for the design and plans of that bridge. The plans, strain sheets, and all details were placed on exhibition at the request of the Exhibition authorities. The New York Connecting Railroad, upon which this bridge is located, is being jointly constructed by the Pennsylvania Railroad and New York, New Haven & Hartford Railroad Companies.

International Engineering Congress, 1915.—Rapid progress is being made in working out the final program of papers for the International Engineering Congress to be held in San Francisco in 1915.

The first volume of the publication of the Congress will consist of a series of articles descriptive of the various technical features of the design and construction of the Panama Canal.

This volume will constitute practically an official technical record of the gigantic engineering feat which is just nearing completion and will be of interest, not only to engineers but to laymen.

No similar volume has as yet been prepared upon the canal, nor is it probable that any such will be in the future. The advantage is being taken of the Congress to draw together under one cover in this way, the statements of the men who have been responsible for the work.

The program of papers for the various sections of the Congress is practically completed and notices of them will be published in the near future. Subscriptions to the Congress are being received daily and on March 1st, the number of enrollment was slightly in excess of 1200, of which over 200 are from foreign countries and about 1000 from the United States. Subscription blanks have been mailed through the various National Societies to many thousands of engineers in this country and through the foreign societies to foreign engineers. The response already received is very encouraging, but it is trusted that all engineers interested in the success of the Congress will not fail to send in their subscriptions as early as possible. Delay in so doing renders the task of the Committee of Management more difficult, and makes it impossible to form any just estimate of the receipts which may be expected and the number of copies of the volumes which have to be published.

February Meeting of Richmond Railroad Club.—At the February meeting of the Richmond Railway Club, Mr. J. A. Kinkead, New York sales manager of the Parksburg Iron Company, delivered an interesting address on Charcoal Iron Tubes. Mr. Kinkead quoted many eminent authorities in support of the durability and long life of these tubes compared with steel' tubes. He pointed out that charcoal iron, on account of its purity, is readily welded, making it an ideal material for safe-ending purpose. Furthermore, the welding temperature and the burning temperature, for the same reason, are widely separated and there is not the danger of burning that might otherwise follow. With steel the welding and burning temperature are close together and for this reason the safe-ending with steel is liable to be unsatisfactory, for, if the welding temperature is exceeded, the material is burned, a condition not generally discovered until the tube is in service.

He also asserted that charcoal iron tubes require less attention between runs. Referring to a large system on which the engines of five divisions were compared, he stated that on the divisions using steel tubes more than half the engines required work on the tubes, while on the divisions using iron, less than ten per cent required attention. Furthermore, on one division where both materials were used, practically every engine reporting serious trouble from leaking tubes running into one of the terminals, was equipped with steel tubes.

Mr. Kinkead asserted that there was economy in the use of charcoal iron boiler tubes for the following reasons:

First—Purity of the iron and freedom from segregation insure greatest resistance to pitting.

Second—Slat coating protects fibres of iron and insures greatest resistance to corrosion.

Third—Works readily. Welds readily. Wears indefinitely. Does not deteriorate in service.

Fourth—Is not crystalline. Does not crystallize with use nor abuse.

Mr. Kinkead illustrated his talk with a number of stereopticon views showing the different stages in the manufacture of tubes from the raw material to the finished product.

Change in Meeting Place of Association of Transportation and Car Accounting Officers.—The Association of Transportation and Car Accounting Officers recently issued a circular announcing a change in place of the June meeting, from Savannah, Georgia, to Atlantic City, New Jersey. It has now been decided to change the date of the meeting from June 23-24 to June 18-19. This was found to be necessary in order to secure suitable hotel accommodations. The meeting will be held at the Hotel Chalfonte, Atlantic City.

February Meeting of Canadian Railway Club.—At the February meeting of the Canadian Railway Club, John S. Hall, student in the Department of Railways of the McGill University, Montreal, spoke on "The College Man and the Railroads." He pointed out that as far back as 1896, the college student as a special apprentice has variously engaged the attention of the master mechanics where he has come in for a lot of adverse criticism, mingled sometimes with a certain amount of praise.

Mr. Hall pointed out that the principal charge most people had against him was that he did not have enough practical experience. He has also been accused of thinking he knows too much and that he was on personal supposition and intellect, much above those who were around him. Mr. Hall's contention is that too much is expected of the special apprentice and that he in turn, expects too much from his employer.

After citing a number of criticisms by prominent railroad men to the effect that special privilege training was fundamentally wrong, he calls attention to the fact that three large and representative railway systems are at the present time building up and engaging in such special training. In reply to the criticism that most college professors do not know what to give their students, he points to the teaching staff of the Department of Railways at the McGill University, every railway subject being handled by a practical railway man.

Mr. Hall pointed out that the vexing question of practical experience for special apprentices naturally turns on the query: "What is the right length of time to put in?" The Canadian Pacific-McGill University answer is two years after graduation.

Someone is quoted as saying that the college man has not an intimate enough knowledge of the men in the ranks, and that when he is in the ranks he is favored to the detriment of the other apprentices.

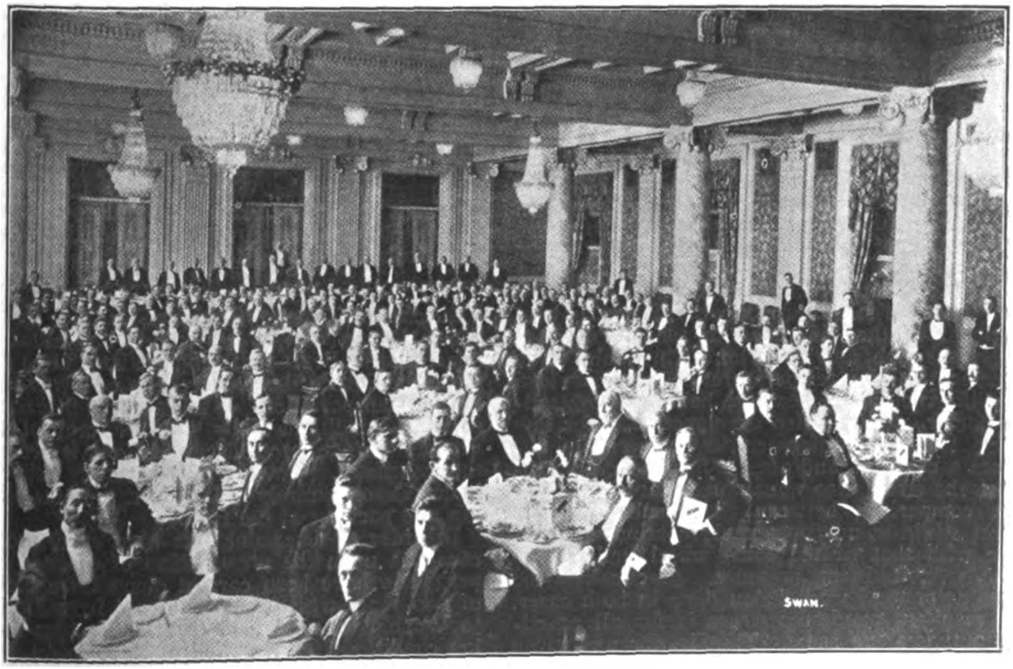
It must be admitted, that, at first, the college man does not have the desirable knowledge of his fellow-workers so essential to success, but, it is just this failing which a rational apprentice course is expected to correct. The man is brought right into contact with the actual condition, and what is more, he is generally placed in this position at a time when it is likely to impress him most. Of course, getting back to first principles, everything depends upon the man himself.

The mistake—and mistake it is—favoring the Special Apprentice to the detriment of the rest of the shop has fortunately been avoided here. The company would not be so foolish and the student himself is carefully warned to avoid it.

There is one thing, however, that appears a little unreasonable, and that is the tendency a great many people have of comparing college graduates immediately with a man generally older and who possesses more experience. They ask why are not college men as good as round house foremen. As a matter of fact, there are a number of graduates who have made good as round house foremen, but it seems a little hard to expect a man with little practical experience to at once measure up to another who has been a number of years on the job. Four or five years after graduation should be the time for considering their respective efficiency.

No college man, if he has truly had regard to himself, will desire to offensively override the opinions of others. But, of course, there are poor college men, just as there are poor railroaders or poor farmers, but we would ask you to seek out the average individual before passing judgment on the whole class.

Tenth Annual Electrical Night of the New York Railroad Club.—The New York Railroad Club held its tenth annual electrical night on the evening of March 20th, at the building of the United Engineering Society. Mr. E. Huberstockar formerly general manager of the Oer-



THE CANADIAN RAILWAY CLUB'S 12TH ANNUAL BANQUET, JANUARY 30, 1914.

likon Works, and now consulting engineer for the Swiss Government and in charge of electrification work for the Gothard Tunnel and also for extensions in the Simplon tunnel, was present and exhibited a number of interesting lantern slides showing the developments in this important work. Prominent electrical engineers summarized the present conditions in railway electrical development in the United States, and short talks were made on certain phases of the work such as electrical safety devices, interference of high tension lines with telephone lines, etc.

Conventions Booked for Panama-Pacific Exposition.—The number of congresses and conventions booked to meet in San Francisco during the Panama-Pacific International Exposition has been swelled to 219, according to James A. Barr, chief of the Bureau of Conventions and Societies. Of these organizations 24 are international congresses and 170 are national conventions with a delegate strength of from 200 to 40,000 each and each will remain in session from four to fifteen days.

March Meeting of Western Railway Club.

LOUIS E. ENDSLEY, professor of railway mechanical engineering at the Purdue University, delivered an interesting address before a meeting of the Western Railway Club, held in Chicago on the evening of March 17th, his subject being "Report of Tests to Determine the Stress in the Plate of Cast Iron Wheels Due to the Heat Produced by the Brake Shoe." The Master Car Builders' brake shoe testing machine was employed in making these tests. By its use, a standard brake shoe may be made to act upon the face of a revovling car wheel mounted upon the same axle with a heavy flywheel, until the whole system is brought to rest. A double cylinder steam engine serves to revolve the machine and the pressure with which the shoe is made to act upon the car wheel is regulated by weights applied to a system of levers, while the tangential pull resulting from the application is recorded upon a paper scroll by an Emery testing machine. The machine is also equipped with a special apparatus whereby it may be run steadily at a given speed, the shoe being automatically applied and released.

For the purpose of determining the stress in the plate of the wheel a Berry steam gauge was employed.

In a general way, the results of the test show that the stress for any given wheel is nearly proportional to the difference in temperature between the hub and the rim. This holds true whether the rim temperature be high or low, the difference in temperature being the controlling factor. It was also developed that for any given test this difference in temperature becomes a constant, and after it has become a constant, the stress also remains constant.

A comparison between the results for any wheel while using 800 pounds continuous pressure with that of the same wheel under 6,840 pounds intermittent pressure, practically the same amount of work being done in both cases, the resultant maximum stress is for all practical purposes the same. That is, for any given wheel the stress set up in the plate of the wheel is almost proportional to the amount of work done by the brake shoe in a given time. The thing which affects this stress in the plate most is the design of the wheel.

Professor Endsley's article was accompanied by a number of diagrams and tables illustrating in a thorough manner the results of the various tests made.

TRAFFIC.

February Anthracite Shipments.—Shipments of anthracite during February were the smallest for that month since February, 1905, and 1,552,718 tons less than in February, 1913. They amounted to 4,121,451 tons as against 5,674,169 tons the previous year. The shipments of anthracite in January and February combined were 2,713,405 tons less than in the corresponding months of 1913. The moderate weather this winter with only a few cold snaps of short duration is the explanation of the small shipments. None of the companies shipped as much as a million tons. The Philadelphia & Reading led in tonnage with 746,793 tons; the Lehigh Valley was second with 681,844 tons; and the Lackawanna was third with 573,553 tons. The Central Railroad of New Jersey carried 563,650 tons, the Erie 533,307 tons, the Delaware & Hudson 442,378 tons, the Pennsylvania 426,100 tons and the New York, Ontario & Western 153,826 tons.

California Celebrates Orange Day.—On March 21st, orange day was celebrated throughout the citrus fruit belt in California. All railroads operating in the far West gave particular prominence to the day by the employment, wherever possible, of the yellow fruit in restaurants and dining cars and the local offices of these lines also advertised the day by giving away paper likenesses of the fruit and literature explaining its value as a health food. A. Waldbauer, the energetic general agent of the Kansas City, Mexico and Orient Railway at Pittsburgh, slipped one over on the fraternity of Western representatives in that city, by being the only one handing out real samples of the California grown fruit. He and his office force spent the day receiving railroad friends and the public calling in response to invitations to drop in and get a real sample of the sunny groves. Appreciating the opportunity, Mr. Waldbauer had had a consignment sent him direct from California over the Orient's "orange" special that delivers the fruit from the groves ten days after picking.

Successful Orange Shipping. — The United States Department of Agriculture has issued an interesting bulletin regarding methods to be employed to insure the preservation of citrus fruit during transportation. It is estimated that under existing conditions fully ten per cent of the Florida orange crop decays before it reaches the consumer. This, the Department believes, is due almost entirely to lack of care in the picking and packing of the fruit.

In order to determine just what effect proper care has upon the preservation of oranges, experiments have been carried along for a period of two years with oranges shipped from Florida to Washington and held there under open market conditions for a period of three weeks.

Each shipment consisted of six boxes, two handled entirely under the direction of the investigators, two picked in the regular commercial way but graded and packed with special care, and two taken at random from the ordinary run of shipments. The following table shows the results of this investigation, the different percentages of decay at the end of the three weeks being particularly impressive:

BLUE-MOLD DECAY IN ORANGES CAREFULLY HANDLED AND COMMERCIALLY HANDLED ON ARRIVAL IN WASHINGTON AND AFTER HOLDING FOR THREE WEEKS; SUMMARY OF THE RESULTS OF THE TWO SEASONS' WORK, 1910-1911 AND 1911-1912.

Time of Examination	Careful pick and pack.	Commercial pick and careful pack.	Commercial pick and pack.
	Per cent	Per cent	Per cent
On arrival	0.6	2.0	5.5
After 1 week	1.0	3.3	8.8
After 2 weeks	1.5	4.5	11.8
After 3 weeks	2.1	5.8	14.2

From 79 comparable shipments made in 1910-11 and 65 comparable shipments made in 1911-12.

In securing these results no methods beyond the reach of commercial growers were employed. Indeed, a number of commercial houses secured results almost as satisfactory as the investigators and one packing house reduced the average decay in its shipments from 15.8 per cent in 1910-11 to 4.1 in 1911-12.

The secret, the investigators find, lies in the prevention of blue-mold. "An injured orange," says the bulletin, "whether grown in California or in Florida, will decay whenever the conditions for the development of blue-mold are favorable. A sound orange in good healthy condition, whether grown in California or in Florida is able to resist blue-mold decay."

Every orange man knows blue-mold when he sees it. It is caused by the growth of a minute organism within the tissues of the fruit, but this organism cannot penetrate the sound living tissue of a well-grown fruit. Before the disease can do harm, therefore, there must be a break or an abrasion of some kind in the skin of the orange. This is why full value for the crop can be obtained only by the most scrupulous care in picking and packing. Heat and moisture help the mold to grow in injured fruit; sound fruit will withstand the most unfavorable weather conditions.

Foreign Commerce for the Fiscal Year.—According to the Department of Commerce, the foreign commerce of the United States made its highest record in the fiscal year 1913. Imports, both free and dutiable, were larger than ever before, and exports, both domestic and foreign, were also the largest on record. Imports were 1,813 million dollars, against 1,654 million in the fiscal year 1912, and exports were 2,466 million dollars, against 2,204 million in 1912.

The Pacific Coast Cantaloupe Crop.—Reports from the Pacific Coast indicate that the cantaloupe crop of that section will greatly exceed that of any previous year. Beginning with small amounts sent out by express a few years ago, Pacific Coast cantaloupe shipments have gradually grownun til last year it took 3,500 cars to handle them. A conservative estimate by the general manager of the Pacific Fruit Express places this year's shipments at over 5,000 cars, which will begin to move about May 20th. In handling this traffic, all cars are iced twice at the initial shipping station and from six to eight times on the way east. An average of eight tons of ice per car is required before the shipment begins to move. The Southern Pacific and the Pacific Fruit Express will require about 45,000 tons of ice to get the cantaloupes to market.

The Extent of Anthracite Coal Mining.—The vastness of the anthracite coal industry is interestingly indicated in the statement that the amount of coal mined together with the rock and refuse which must also be lifted from the mines, aggregates a total annual cubic yardage of excavation equal to, if not greater than, the total yardage excavated in the digging of the Panama Canal. In other words, the average yearly excavation of coal during the years 1904 to 1913, inclusive, amounted to at least 90,000,000 cubic yards, the rock and refuse equalled 100,000,000 cubic yards, while the gigantic strippings, estimated by one contractor at 12,000,000 cubic yards a year, and the miles of drainage tunnels cut through the solid rock easily bring up the total annual cubic yardage of excavation to that which was originally estimated as necessary in the digging of the Panama Canal, namely, 195,323,000 cubic yards. When it is appreciated that this amount of work is performed yearly in order to supply the demands of the anthracite coal industry, it is little to be wondered at that the supply of this valued mineral cannot be expected to last indefinitely.

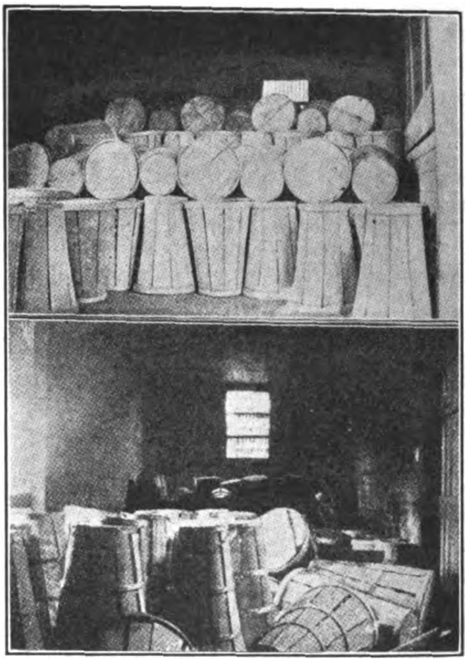
Early Crops in the South Damaged.—Reports from the South indicate that considerable damage occurred to early crops in Florida and Georgia on account of the severe frosts prevalent in these States on March 1st and 2nd. In some places, on the lower coast of Florida, the temperature went as low as the freezing point, doing great damage to various vegetable crops. The truck lands from Miami to Fort Lauderdale, lost from sixty to seventy-five per cent of their crops and it is reported that the recent frosts were the most destructive that have visited this section in twenty-four years. The West coast of Florida was not damaged to any great extent.

Decrease in Iron and Steel Imports.—It is a matter of considerable surprise to those who had expected a different outcome, that imports of iron and steel in the United States during the first four months, or since the enactment of the present tariff law should show a decrease of nearly $1,000,000 when compared with those of a like period a year ago. For the period from October 4, 1913, to the end of January last, the total was $10,219,000, compared with $11,077,000 in a like period ending with January, 1913. Most of this decrease occurred in the last month of the period under review; October showing a decrease of $199,000; November, a decrease of $298,000; December, an increase of $166,000; and January, a decrease of $526,000 in comparison with the respective months of the preceding year.

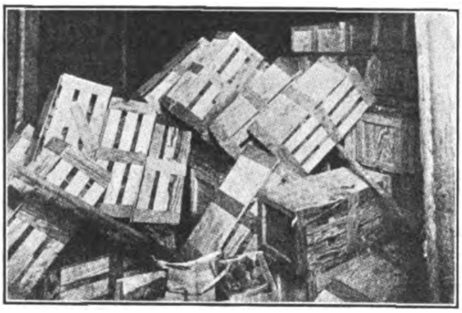
Decreased imports, according to compilations of the Bureau of Foreign and Domestic Commerce, Department of Commerce, are shown to have occurred during January in nearly all classes of iron and steel except cutlery, tin plates, and bar iron.

Imports and Exports for January.— Detailed figures of the imports into and exports from the United States for January and the seven months ended with January, 1914, published by the Department of Commerce, show imports in January approximating $154,400,000 and exports slightly in excess of $204,100,000 a total trade of a little over $358,500,000. In the seven months' period ended with January, 1914, imports were a little below $1,067,900,000 and exports were something more than $1,522,100,000, an aggregate trade in excess of $2,590,000,000. The trade balance favoring the United States is about $50,000,000 for the month of January, 1914, and for the seven months ended January, 1914, exceeds $454,000,000.

The Proper Loading of Perishable Merchandise.—The Georgia, Southern and Florida Railway Company which transports large quantities of garden truck to fruits to Eastern markets, has issued a circular containing rules governing the proper marking and loading of perishable freight which should prove of interest to all those engaged in the movement of fruits and vegetables. This circular contains a number of extremely interesting photographs showing the right and wrong way of loading merchandise of this character.

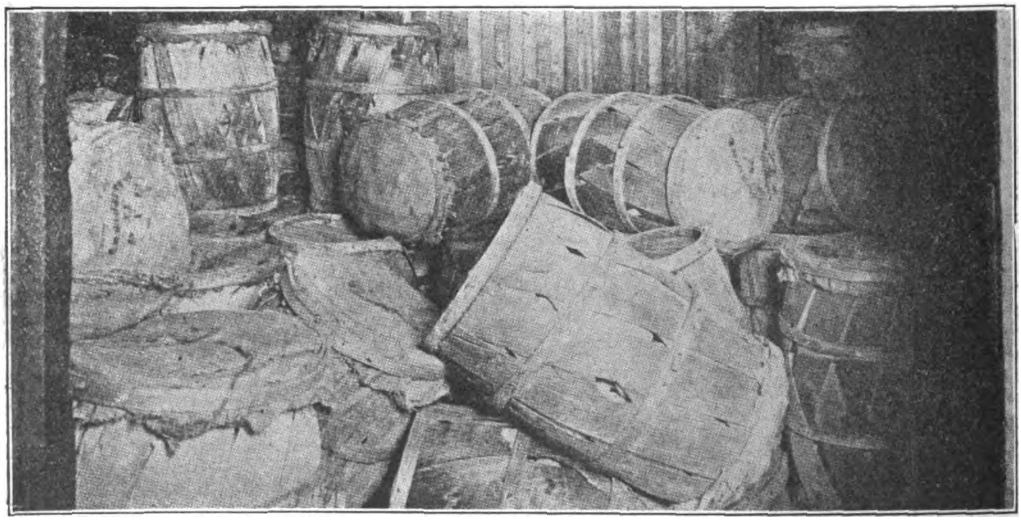


WHEN A CAR IS LOADED AS SHOWN IN UPPER PICTURE, THE PACKAGES USUALLY ARRIVE AT DESTINATION IN THE CONDITION SHOWN IN LOWER ONE. THE VACANT SPACE LEFT IN THE DOORWAY SELDOM FAILS TO GET IN ITS WORK.

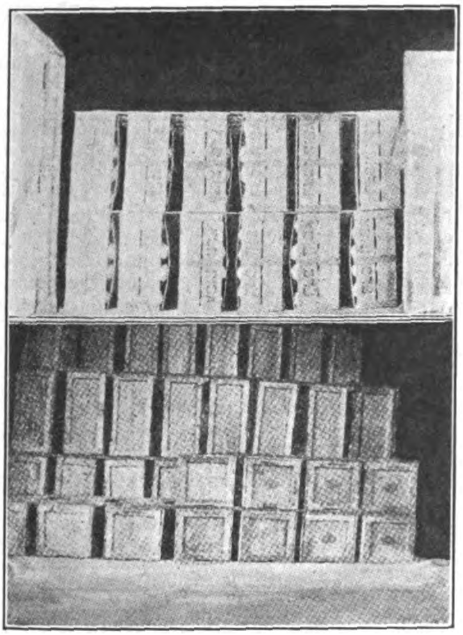


CONDITION OF CAR OF PEACHES UPON ARRIVAL AT DESTINATION, DUE TO IMPROPER LOADING.

The circular calls attention to the fact that under no conditions should the doorway of the freight car be left clear unless the bottom tiers



THE RESULT OF SHIPPING BARRELS OF POTATOES ON ENDS, WHEN THE BARRELS IN SECOND TIER ARE NOT BRACED AND ALL THE DOORWAY SPACE IS NOT FILLED.

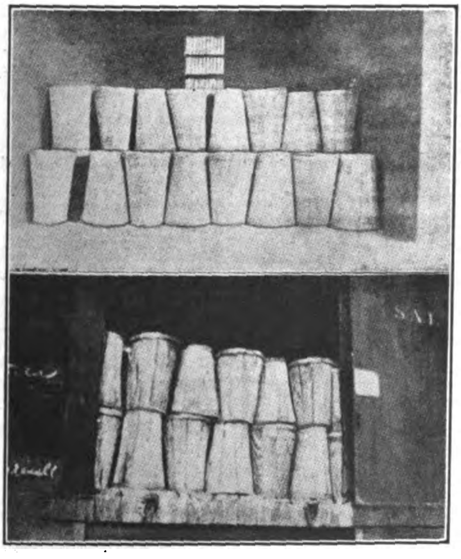


Examples of Proper Loading.

The first represents car of grape fruit; the second car of beets and tomatoes.

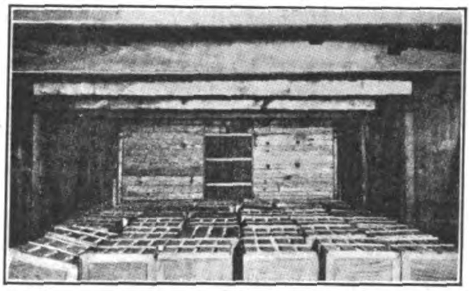
of the packages are securely braced and all other tiers secured or "stepped down" to protect packages against falling. Among the loading suggestions which are intended for shippers loading carload shipments and for agents consolidating less carload shipments into solid cars, are the following:

(1) If space in the doorway of car is not used, the bottom tiers or packages should be securely braced and all other tiers braced or "stepped down" so it will be impossible for a package to fall from its original position.



First picture shows car partly loaded with hamper baskets containing cucumbers.

Second picture shows car fully loaded with entire floor space covered.



Well loaded car of peppers and tomatoes.

(2) The entire floor space should be covered by the bottom tier and all other tiers securely braced or "stepped down" so that it will be impossible for a package to fall from its position.

(3) The entire floor space should be covered by two or more tiers and the remaining packages braced or "stepped down" so that it will be impossible for a package to fall from its original position.

(4) Packages should cover the entire floor space, tier on tier, as long as there are packages to make solid tiers. Odd packages left over after completing the last full tier must be distributed over the top tier resting on their broadest surface to prevent their toppling over.

The accompanying illustrations give an excellent idea of the educational value of those found in the circular.

The South and the Panama Canal.—In addressing the Greenville (S. C.) Chamber of Commerce, on the evening of March 17th, Mr. Fairfax Harrison, president of the Southern Railway spoke on Southern Cotton Mill Development and Co-operation for a Broader Market for Southern cotton goods with special reference to the opportunities that would be opened up by the Panama Canal. He referred to the manner in which the supremacy in the manufacture of cotton goods in the United States was rapidly passing through New England to the South and in answer to the question as to how to give this tendency still further and larger expression, Mr. Harrison pointed out the opportunities that will be opened by the Panama Canal when he said:

"The men who are first on the ground will have an immense advantage over those who wait until ships are actually passing through the Canal before making a move. Let us in the South then take full advantage of our geographical opportunity and of a tendency of commerce in our favor, and, as the phrase is, beat the Yankees to it. We have in the past given them what the fashion now is to term 'fair competition,' and we should not forget that our fathers taught us to fight intelligently as well as gallantly for the Southland."

Mr. Harrison showed that of total importations of cotton goods into the Latin-American countries amounting to $102,067,180 a year, only about ten per cent were shipped from the United States as compared with more than fifty per cent from England, about fifteen per cent from Germany, and considerable quantities from other countries.

Speaking of methods of developing trade with the Latin-American countries and of the expense of individual effort, Mr. Harrison urged co-operative effort, and suggested a specific plan by which the Southern Railway Company could join with Southern manufacturers and Southern merchants in the expense necessary to initiate, direct and maintain a profitable current of competitive and peculiarly Southern commerce in this new channel.

He said that in anticipation of the completion of the Canal, the Southern Railway Company had already had a detailed report from a highly qualified expert which is full of valuable suggestion and that this information and such additional information as could be obtained by the Company from the various governmental offices in Washington was freely at the disposal of any one along the Company's lines who might be interested in the subject.

He spoke of the importance of direct and regular steamship service in the development of import and export traffic through the South Atlantic and Gulf ports and he emphasized the desirability of such co-operative and co-ordinate effort as he had suggested seeking the development of such a volume of business as will warrant the establishment of direct and regular steamship lines. He said:

"If this matter shall be handled intelligently and energetically by a small group of the interests concerned I believe it will be practicable to build up a substantial and profitable direct trade with the Latin-American countries and that no one will benefit more largely from this than will the Southern manufacturers of cotton goods.

STATE COMMISSIONS.

California.— The Railroad Commission has sustained the complaint of an apple-grower who was charged $1.75 a ton by the Southern Pacific for the transportation of apples to canners and $2.75 for apples for sale in the open market, and has ordered that the same rates be applied to all apples. The road contended that the grades of the fruit differed and the higher grade required a higher rate.

Canada.—The Canadian Railroad Commission has suspended the increased rates of fare in Canada for exclusive use of drawing-rooms and compartments of sleeping cars, pending investigation. In this they have followed the example of the railroad commission in the State of Washington, which has gone still further by refusing to allow railroads in the Northwest to enforce the new rule, which went into effect in March.

Illinois.—The Public Utilities Commission has suspended for 120 days the cancellation of through freight rates made by trunk lines entering Chicago in connection with the eight industrial lines in the city. This action leaves the old schedule in effect.

Louisiana.— So many complaints have been made against the new express rates in Louisiana that the State Railroad Commission has decided to investigate and consider all that are specific. They became effective February 1st and have caused much dissatisfaction, especially among shippers of produce. The Commission has started a hearing on the subject at New Orleans, and all the express companies have been notified to have their representatives present.

New Hampshire.— The State Public Service Commission has been asked to grant permission to the Boston & Maine to put in force the proposed increase in one-day passenger and mileage rates without waiting for the action of the Massachusetts authorities on the application to eliminate trip tickets. If the application, which is now under advisement, is granted, the present two cents a mile rate will be raised to a flat 2½-cent rate. The mileage rate would be raised from 2 to 2¼ cents. It is estimated that this would mean an increased revenue of more than $1,000,000 a year.

New York.—The Public Service Commission, Second District, has issued the following order authorizing the Buffalo, Rochester & Pittsburgh Railway Company to issue its five per cent series "H" equipment bonds of a total par value of $881,038.19 pursuant to certain indenture designated as Equipment Agreement Series "H" dated July 1st, 1913, with the Guaranty Trust Company of New York, Trustee. These bonds are to be sold at not less than 99.75 per cent of their par value and accrued interest, the proceeds to be used for the purchase of additional equipment.

Pennsylvania.—The Public Service Commission, March 30th, conducted a hearing in Philadelphia, in the case of the Monongahela Connecting Railroad, of Pittsburgh, against the Pennsylvania, Baltimore & Ohio and Pittsburgh & Lake Erie Railroads. The trunk lines had announced the abolition of their joint rate, to take effect April 1st.

The Monongahela officials protested that thirty days' notice of the change had not been given to the Commission, as provided for by law. They wanted time to submit their contention that the road is not an "industrial" or "plant" road, as it has been classified by the Interstate Commerce Commission, whose ruling was responsible for the determination of the trunk lines to abolish their rate agreements with such roads.

The Commission held that without thirty days' notice to it, the abolition of the joint rates would be illegal. This notice was held to be necessary in addition to the thirty days' notice to the public.

A number of other such roads as well as hundreds of shippers were represented at the hearing all asking that the order of the trunk lines be suspended and a date set for a later hearing when testimony could be taken on the propriety of the abolition of the joint rate.

The trunk lines were represented also. They requested that the joint rate be abolished April 1st, as planned. They contended that the notice of the change placed in their stations was sufficient notice to the Commission.

Tennessee.—Sweeping reductions of from 20 to 25 per cent are to go into effect on May 1st, in express rates upon merchandise packages in Tennessee, under an order of the State Railroad Commission. The express companies have accepted the changes and will prepare the necessary tariffs for submission to the Commission.

Washington.— The Great Northern Railway Company made application to the Washington Public Service Commission for permission to refund sums, totaling more than $500, to about fifty passengers, who the railroad management states, were overcharged. The application, the first of the kind ever filed, was granted immediately. It is the outgrowth of the blocking of the Great Northern line across the Cascades last October for repairs, when trains were detoured over the Spokane, Portland and Seattle and passengers from Seattle to Wenatchee were compelled to pay for the mileage of a haul to Spokane and back to Wenatchee and vice versa.

LEGAL.

Interstate Commerce Commission's Jurisdiction Over Rates Upheld.—Judge Adams in the United States Circuit Court at St. Louis, Mo., has rendered a decision to the effect that the Interstate Commerce Commission has exclusive jurisdiction over the regulation of interstate railroad rates. Judge Adams dissolved a temporary injunction restraining the Wabash Railroad from filing new rates for shipments from the Illinois Glass Works at Alton, Ill. Joseph W. Folk, chief counsel for the Commission, in commenting upon the decision, said that it would prevent shippers in the future from enjoining the enforcement of increased rates granted by the Commission. The Court held that it was for the Commission to decide whether a railroad was an industrial line or a common carrier and whether a railroad should file new rates.

Court Upholds Louisville and Nashville's Refusal to Permit Commission to Examine Files.—The Government has been refused a mandamus by Judge Evans in the Federal Court at Louisville, Ky., by which it desires to compel the Louisville and Nashville Railroad to give examiners of the Commission, access to all files and records. The decision of the Court holds that certain communications the railroad refused to produce, were privileged between lawyer and client; that the Hepburn Law does not give the Commission power to make general examinations, and that the inquiry in question is not along line sufficiently specific.

Decision Under the Hours of Service Law.—In the case of the Government against the Southern Railway in the District Court of the United States for the Western District of South Carolina, Judge Smith recently gave the following decision:

1. The occurrence of an accident or delay by the act of God, or of a casualty or unavoidable accident, while a train is in course of transit from one terminal point to another, does not suspend the entire hours of service act as to that train. The statute does not mean that as to a train so delayed the operative period of service is extended from 16 to 21 or 26 hours, according as some delay from the exempting causes may occur whilst the train is in transit.

2. The hours of service may be extended in such cases beyond the period fixed in the statute, only so far as may be necessary to permit the train to be operated to a point at which, due regard being had to all the circumstances of the particular case and the character of the train, the train crew could be relieved or be allowed to take the rest required by the statute.

3. When a freight train was reported at a way station to have already exceeded the statutory limit of service and there was no extraordinary exigency that required this freight train to go on to its final terminal, if the jury finds that such train reasonably could have been tied up at such way station so as to give the employes the rest required by the statute, the railroad officials were not justified in permitting them to continue to exceed the statutory limit of labor. If there has been a delay produced by justifiable causes at the time the train reached a way station, still if there was a point either at that station or some other where the train reasonably could have been tied up, or a new crew put on, the train could only be operated after the limit of sixteen hours until a suitable stopping place could be reached; and it is the railroad's duty to have suitable stopping places where rest can be had for its employes, at proper places along its road, proportionate to the exigencies of the business.

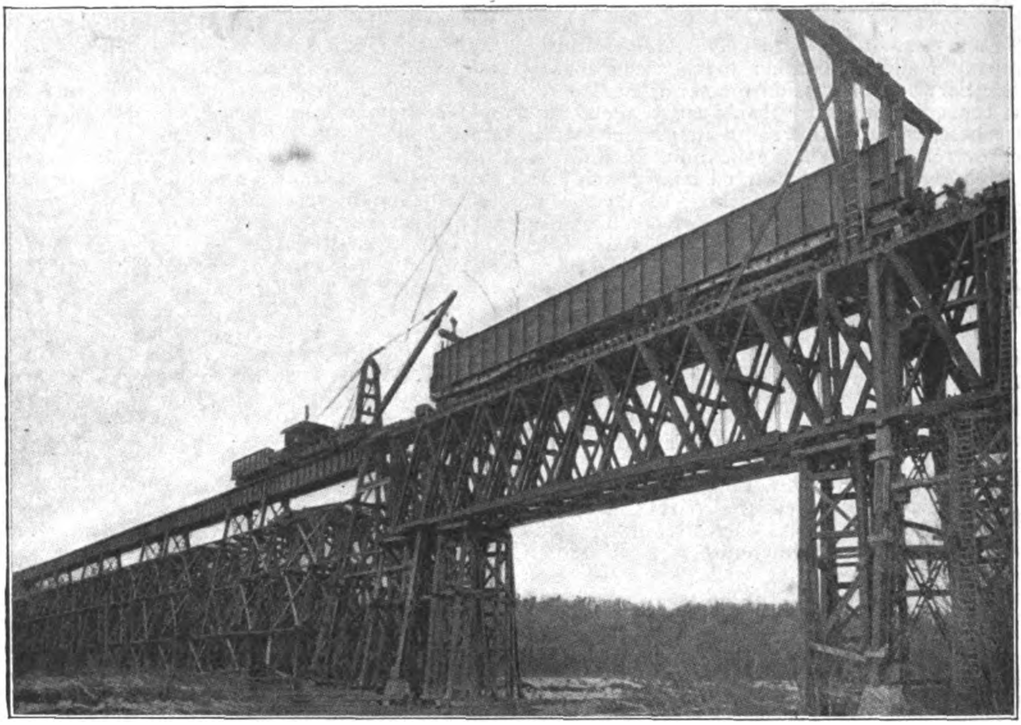
4. The same rule is laid down where train en route is reported at a way station when the period of service for the train crew is within a few minutes of the expiration of the sixteen-hour period and there is no reasonable expectation of being able to make the final terminal within the sixteen hours.

CONSTRUCTION.

Second Track for the Cincinnati, New Orleans and Texas Pacific Railway.—New second main track on the Cincinnati, New Orleans and Texas Pacific Railway between Sherman, Ky., and Dry Ridge, Ky., a distance of four miles, has just been put in service, completing a continuous double track stretch of 24.8 miles from Erlanger, Ky. Vice-President T. C. Powell announces that work is progressing on the second track under construction from Dry Ridge to mile post 37, a distance of 5.4 miles, and that, with the completion of this and other work, the C. N. O. & T. P. will have 37 miles of continuous double track from Ludlow, Ky.

Progress in Bridge Construction.— Railway bridge construction, like the construction of terminals, has shown remarkable progress during the past few years. This is strikingly illustrated by the accompanying photograph which shows a bridge span manufactured by the American Bridge Company, being placed in service on the Duluth, South Shore and Atlantic Railway's bridge near Shilo, Wis., on December 16th. This monstrous span which is 121 feet in length and weighs 108 tons, would have been considered a practical impossibility a few years ago, as even its manufacture would still have left it without means of transportation or erection. In this particular case, however, it was only a portion of a shipment of 93 cars of fabricated bridge material which this Company is using to replace as rapidly as possible the wooden trestles and trusses now in service.

The method of installing the span is of interest. As indicated in the photograph, it was assembled and bolted together on two standard steel flat cars and moved out to position on the



Placing an Enormous Bridge Span in Service on the Duluth, South Shore and Atlantic Railway.

old bridge by a derrick car at 7.30 A. M. This car on one end and gallows frame and falls handled by a hoisting engine on the other end, lifted the span clear of the cars which were then pulled out on to the wooden trestle, clear of the span. The deck of the old wooden span was then removed piece by piece and dropped into the river. This permitted the 108 ton steel girder span to be lowered into position, final connections being made at 2.30 P. M., the task of installation being completely accomplished in seven hours.

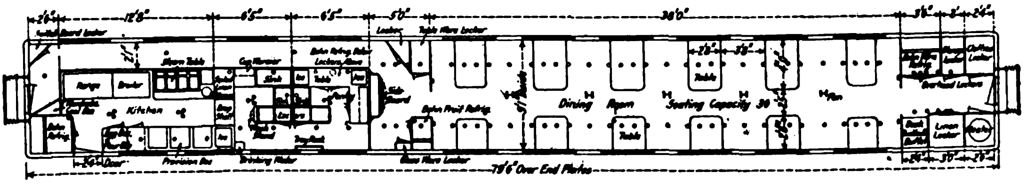
EQUIPMENT.

The Burlington's New Dining Cars.

THE Pullman Company has recently delivered to the Chicago, Burlington and Quincy, five new all steel dining cars, the basis of whose construction has been the Government's specifications for postal cars. Furthermore, the general design of these cars is such that it may be conveniently employed, with the necessary modifications, for any other passenger train cars.

The length of these cars is 79 feet 6 inches, making them the longest dining cars in existence, and they have a capacity of thirty-six peo-

Interior of Burlington's New Dining Car.



2'6"
12'8"
6'5"
6'5"
5'0"
30'0"
3'6"
3'
2'6"
Switch Board Locker
Locker
Table Ware Locker
Steam Table
Cup Warmer
Range
Broiler
Sink
Ice
Table
Side Board
Kitchen
Table
Dining Room
Seating Capacity 30
Clothes Locker
Overhead Lockers
Linen Locker
Heater
Door
Provision Box
Drinking Water
Glass Ware Locker
79'6" Over End Plates

Diagram of Interior Arrangement of Burlington's New Dining Car.

ple an increase of 20 per cent over older cars. In following the Government's specifications for postal cars, the effort was to meet any possible future Government requirement for strength and character of material used in construction, everything having been made of steel with the exception of the chairs.

The lighting is of an indirect character and comes from sixty-six electric lamps located and concealed in glass covered troughs near the base of the deck sash. This system of diffused lighting eliminates shadows and closely approximates actual daylight.

A side door two feet four inches wide, opening directly into the kitchen, has been provided so that the car may easily be provisioned. The kitchen has been laid out according to the standard practice of the Pullman Company and is provided with all of the latest improvements.

Extension of Telephone Service on Southern Roads.— Vice-President Powell of the Alabama Great Southern Railroad and of the Queen and Crescent Route, announces that the telephone will be substituted for the telegraph in dispatching trains and handling messages on the entire line of 296 miles between Chattanooga and Meridian. The telephone has also been used for some time with great success on the Cincinnati, New Orleans and Texas Pacific Railway and will soon be in use over its entire length so that with its completion on the Alabama Great Southern, trains will be dispatched by telephone for the entire distance of 630 miles between Cincinnati and Meridian.

Ship Building in 1913.—The world's ship building results for 1913 clearly demonstrated the leadership of Great Britain as a tonnage producing country, the Clyde being easily the first and greatest of all ship building and marine engineering districts.

The total new construction for the year, according to Canadian Machinery numbered 3,936 vessels with a measurement of 4,267,166 tons, while there is recorded the remarkable total of 4,924,799 i. h. p. These figures show an increase over those of 1912 by 325 vessels, 500,000 measured tons and 677,000 i. h. p. The United Kingdom's share of the 1913 construction was 1,474 vessels of 2,263,933 tons and there were manufactured marine engines of 2,661,260 i. h. p. The great liners which were built during the year were as follows:

Vessel and Type.	Tons.
Vaterland, four screw turbine	*56,000
Acquitania, four screw turbine	†47,000
Columbus, twin screw turbine	‡35,000
Tirpitz, twin screw turbine	*21,600
Alastian, four screw turbine	§18,500
Galgarian, four screw turbine	§18,500
Cap Trafalger, three screw turbine	*18,000

*Hamburg-American Line.
†Cunard Line.
‡Norddeutscher Lloyd.
§Allen Line.

Extending the Automatic Electric Block System on the Southern Railway.—Automatic electric block signals will be immediately installed by the Southern Railway on the double track line between Knoxville and Morristown, a distance of 42 miles and one of the most important lines on the Southern Railway System, as over it are handled the through trains between Memphis and New York, between New Orleans, Birmingham, Chattanooga and New York, and a large part of the travel to Asheville and other Carolina resorts.

The system will be of the most modern type and will greatly facilitate and safeguard traffic. It will be similar to that completed last year in North Carolina between Greensboro and Charlotte, and now being installed in Virginia between Alexandria and Orange.

LABOR.

Arbitration Board to Settle Disputed Interpretations.—The Arbitration Board which made the award in the recent Eastern wage controversy, involving the salaries of trainmen and conductors, have been called upon to consider complaints to the effect that a number of roads have misinterpreted certain provisions in the award. It has been agreed to both by the railways and the employes to abide by such interpretation as the Board may make of the disputed provisions.

LAND AND INDUSTRIAL.

The Railways' Part in Community Development.—In a recent address before the Selma, Ala., Chamber of Commerce on Railroad Co-Operation in Southern Agricultural Development, President Fairfax Harrison of the Southern Railway pointed out that, as a business enterprise seeking increased prosperity through an enlargement of its volume of traffic, a railroad may properly co-operate with the people whom it serves for community development. Mr. Harrison told of the organization of the Southern Railway Land and Industrial Department, and declared his purpose to continue this work and to give it close personal attention. He spoke of its special value in the pending revolution of agriculture in the South, brought about by the invasion of the Mexican cotton boll weevil, which, by enforcing the arguments of experts for diversified agriculture may yet prove a real educational force in the South.

Mr. Harrison cited the reports of the United States census of 1910, showing that at that time 2,571,734 natives of the nine Southeastern States traversed by the Southern Railway lines were living in other States, while only 472,412 natives of other States were living in these nine States, making the net loss of population to the section through the movement to other States 2,199,322, or approximately 61,000 more than the total population of Alabama in 1910. He said in part:

"In this connection, I would like to impress upon the Southern people my conviction that keeping our own people at home is even more important to our progress than attracting settlers from other localities. Through our Land and Industrial Department and all of our agencies working for Southern development, we are seeking to impress upon the people along our lines the superiority of our own section, and, so far as we are able to do so, we endeavor to persuade individuals contemplating removing to other parts of the country to remain in the South."

ELECTIONS AND APPOINTMENTS.

Executive.

E. R. Ackerman, member of the Board of Directors, Central Railroad Company of New Jersey.

W. H. Beardsley, president, Florida East Coast Railway. Headquarters, New York.

H. A. Butler, president and general manager, Mauch Chunk Switchback Railway.

M. L. Clothier, director, Lehigh Valley Railroad.

John W. Everman, president, Union Depot Co. Headquarters, El Paso, Texas.

Louis C. Fritch, assistant to the president, Canadian Northern. Headquarters, Toronto, Ont.

Carl R. Gray, chairman of the board and president, Western Maryland Railway. Headquarters, Baltimore, Md.

James S. Harlan, chairman, Interstate Commerce Commission.

Louis W. Hill, president, Great Northern Railway.

W. I. Jones, assistant to the vice-president in charge of traffic Missouri Pacific, St. Louis, Iron Mountain and Southern, Denver and Rio Grande and Western Pacific Railways.

William R. Kenan, Jr., vice-president, Florida East Coast Railway. Headquarters, New York.

J. M. Kurn, president, Detroit, Toledo and Ironton Railroad.

James T. Leary, controller, Baltimore and Ohio. Headquarters, Baltimore, Md.

Edward H. Lee, vice-president and chief engineer, Chicago and Western Indiana and the Belt Railway of Chicago. Headquarters, Chicago, Ill.

I. McQuiltin, vice-president, Carolina, Clinchfield & Ohio Railway. Headquarters, Johnson City, Tenn.

E. P. Ripley, president, Gulf & Interstate Railway of Texas.

James Russell, assistant to the vice-president, Denver and Rio Grande Railroad. Headquarters, Denver, Colo.

John Scullin, receiver, Missouri & North Arkansas Railroad. Headquarters, St. Louis, Mo.

James N. Wallace, director, Westinghouse Electric & Manufacturing Company.

Herman H. Westington, director, Westinghouse Electric & Manufacturing Company.

A. G. Whittington, second vice-president and general manager, International and Great Northern. Headquarters, Houston, Texas.

Legal.

Joseph W. Folk, chief counsel, Interstate Commerce Commission.

Joseph F. Gould, general counsel, Bangor & Aroostook Railway. Headquarters, Bangor, Me.

C. C. Huff, general attorney, Missouri, Kansas and Texas. Headquarters, Dallas, Texas.

Financial.

L. C. Haines, treasurer, Florida East Coast Railway. Headquarters, New York.

Charles N. Hebner, secretary, Illinois Public Utilities Commission.

Maury Middleton, assistant treasurer and assistant cashier, Southern Railway. Headquarters, Washington, D. C.

Accounting.

E. E. Hamilton, supervisor of operating statistics, Baltimore and Ohio Railroad.

W. B. Moss, assistant statistician, Norfolk & Western Railway.

Engineering and Mechanical.

F. Adams, division engineer, Texas and Pacific Railway. Headquarters, Alexandria, La.

C. E. Apple, supervisor of bridges and buildings, San Antonio and Aransas Pass Railway. Headquarters, Yoakum, Texas.

Charles F. Barnhill, master mechanic, Beaumont Division, Gulf, Colorado & Santa Fe Railway. Headquarters, Silsbee, Texas.

William Bartley, superintendent of car service, Lake Erie and Western Railroad. Headquarters, Indianapolis, Ind.

S. M. Bate, division engineer, Missouri Pacific Railway. Headquarters, St. Louis, Mo.

F. Bauer, assistant master mechanic, Cleveland-Indianapolis and Cincinnati-Sandusky divisions, Cleveland, Cincinnati, Chicago and St. Louis. Headquarters, Bellefontaine, Ohio.

F. V. Berkey, assistant engineer, Zanesville division, Central system, Pennsylvania Lines West of Pittsburgh. Headquarters, Zanesville, Ohio.

Wilbur M. Bosworth, mechanical engineer, Louisville & Nashville. Headquarters, Louisville, Ky.

C. A. Brandt, master mechanic, Chicago, Michigan and the Peoria and Eastern divisions, Cleveland, Cincinnati, Chicago and St. Louis. Headquarters, Indianapolis, Ind.

F. H. Buchanan, signal engineer, Pennsylvania Lines West of Pittsburgh. Headquarters, Pittsburgh, Pa.

Millard F. Cox, assistant superintendent of machinery, Louisville and Nashville Railroad. Headquarters, Louisville, Ky.

G. Davis, division engineer, Oklahoma division, Chicago, Rock Island and Pacific. Headquarters, El Reno, Okla.

Charles G. Delo, chief engineer, Chicago Great Western. Headquarters, Chicago, Illinois.

John Dickson, general master mechanic, Spokane, Portland and Seattle, the Oregon Trunk, Oregon Electric and United Railways. Headquarters, Portland, Oregon.

J. Dwyer, roadmaster, Portland Division, Spokane, Portland & Seattle Railway. Headquarters, Portland, Oregon.

G. F. Eberly, division engineer, Baltimore and Ohio Railroad. Headquarters, Wheeling, W. Va.

E. Gephart, supervisor of bridges and buildings, Northern and Southern divisions, Chicago & Alton Railroad. Headquarters, Bloomington, Ill.

R. P. Graham, assistant supervisor, Conemaugh Division, Pennsylvania Railroad. Headquarters, Philadelphia, Pa.

F. D. Griffin, assistant engineer, Gulf, Colorado and Santa Fe Railway. Headquarters, Dallas, Texas.

W. E. Guignon, division engineer, Zanesville Division, Central System, Pennsylvania Lines West. Headquarters, Zanesville, Ohio.

J. C. Haley, architect, Louisville & Nashville Railroad.

W. S. Hanley, chief engineer, New Orleans Great Northern Railroad.

H. H. Harsh, division engineer, Cleveland Division, Baltimore and Ohio Railroad. Headquarters, Cleveland, Ohio.

C. S. Heritage, engineer, Washington Terminal Company. Headquarters, Washington, D. C.

J. C. Hoehle, architect, Louisville and Nashville Railroad. Headquarters, Louisville, Ky.

W. W. Hubley, supervisor Division No. 26, Pennsylvania Railroad. Headquarters, Columbia, Pa.

J. B. Hutchinson, Jr., division engineer, Monongahela Division, Pennsylvania Railroad. Headquarters, Pittsburgh, Pa.

Jenks B. Jenkins, valuation engineer, Baltimore and Ohio System.

DIVIDEND NOTICES.

Office of The United Gas Improvement Co.

N. W. corner Broad and Arch Streets.

Philadelphia, March 11, 1914.

The Directors have this day declared a quarterly dividend of two per cent ($1.00 per share), payable April 15, 1914, to stockholders of record at the close of business March 31, 1914. Checks will be mailed.

LEWIS LILLIE, Treasurer.

UNITED STATES RUBBER COMPANY.

1790 Broadway, New York, April 2nd, 1914.

The Board of Directors of the United States Rubber Company has this day declared from its net profits a quarterly dividend of Two Per cent (2%) on the First Preferred Stock, a quarterly dividend of one and one-half Per Cent (1½%) on the Second Preferred Stock, and a quarterly dividend of One and one-half Per Cent (1½%) on the Common Stock of the Company, to Stockholders of record at 3 P. M., on Wednesday, April 15th, 1914, payable, without closing of the Transfer Books, April 30th, 1914.

W. G. PARSONS, Treasurer.

LEHIGH VALLEY RAILROAD COMPANY.

Philadelphia, March 18, 1914.

The Board of Directors of the Lehigh Valley Railroad Company have this day declared a quarterly dividend of two and one-half per cent (or $1.25 per share) on its preferred stock to stockholders of record, March 28, 1914; and a quarterly dividend of two and one-half per cent (or $1.25 per share) on its common stock to stockholders of record, March 28, 1914; both payable April 11, 1914.

Checks will be mailed.

J. M. BAXTER, Treasurer.

Hotel Gregorian,

35th St., Near Broadway.
NEW YORK CITY.

Famous for refined, homelike atmosphere and luxurious comforts at moderate prices. A few minutes' walk from Pennsylvania and New York Central Depots, immediately surrounded by leading theatres and retail shops.

300 Rooms with Private Bath
$2.00 to $4.00 per day.
Parlor, Bedroom, Bath, $4 up

Special terms for month or season. Restaurant Table d'Hote and a la Carte.

DANIEL P. RITCHEY, Prop.

Statement for April, 1914, of the ownership, management, etc., of the "Railway World," published monthly at Philadelphia, Pa., required by the Act of August 24, 1913.

Editor	Edward G. Ward,	Philadelphia, Pa.
Publisher,	"Railway World,"	Philadelphia, Pa.

Stockholders:

E. Gaskin,	Buffalo, N. Y.
M. A. Ward,	Brooklyn, N. Y.
Chas. M. King,	New York City.
Garrison M. King,	New York City.
B. C. Tucker,	Cleveland, Ohio.
C. C. McCain,	New York City.
C. S. McCain,	Maplewood, N. J.
W. J. Conners,	Buffalo, N. Y.
Harry Howarth,	Trenton, N. J.
Frank F. Henry,	Buffalo, N. Y.
Allen Waldbauer,	Pittsburgh, Pa.

Bondholders:

Harper & Bro. Co.,	Philadelphia.
W. B. Jenkins,	New York.
J. F. Tucker, Est.,	Chicago, Ill.
F. C. Howlett, Est.,	Syracuse, N. Y.
H. C. Blye,	New York.
R. W. Baxter,	Seattle, Wash.
C. M. Heald,	Buffalo, N. Y.
E. T. Douglass,	Philadelphia.

(Signed) E. G. WARD,
Editor.

Sworn to and subscribed before me this 27th day of March, 1914.

(Signed) WALTER M. BARBER,
Notary Public.

(My commission expires February 21, 1915.)

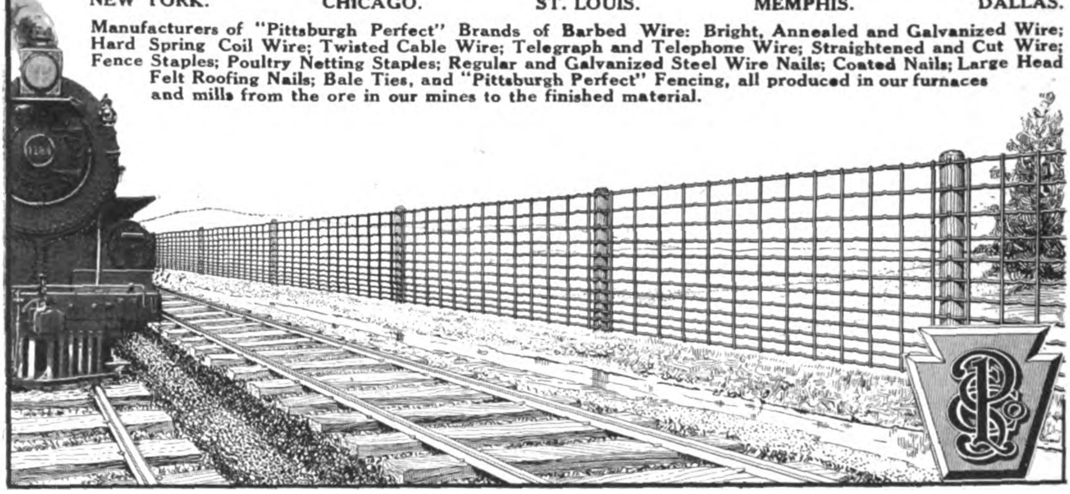
"Pittsburgh Perfect" Railroad Fencing

Bought by leading railroads of the United States and Canada because it excels in strength and durability, and affords perfect protection to the right-of-way. Made of special formula Open Hearth wire, **HEAV LY AND THOROUGHLY GALVANIZED.** ELECTRICALLY WELDED JOINTS. A one-piece fabric, easiest to erect. Write for catalogue and prices.

PITTSBURGH STEEL CO., PITTSBURGH, PA.

NEW YORK. CHICAGO. ST. LOUIS. MEMPHIS. DALLAS.

Manufacturers of "Pittsburgh Perfect" Brands of Barbed Wire: Bright, Annealed and Galvanized Wire; Hard Spring Coil Wire; Twisted Cable Wire; Telegraph and Telephone Wire; Straightened and Cut Wire; Fence Staples; Poultry Netting Staples; Regular and Galvanized Steel Wire Nails; Coated Nails; Large Head Felt Roofing Nails; Bale Ties, and "Pittsburgh Perfect" Fencing, all produced in our furnaces and mills from the ore in our mines to the finished material.



The Wooding Automatic Train Stop

This device is recognized by all Engineers as being far superior to any other.

It is operated by the **closed electrical circuit** which is the **only reliable means** for operating **any** automatic device. This necessitates a **contact.**

Our contact is a covered split rail. It is the **smallest,** gives the **greatest clearance,** makes the **best contact,** and is **weather-proof.**

The train contact is a strong **steel blade** that offers the **least** obstruction and **makes** the **best knife blade electrical connection.**

All agree that the **wrecks** on roads **equipped** with the **block signals are due** to the **human failure, demonstrating positively** the **reliability** and **necessity** for the **automatic train stop.**

Our Government for the people says through the Interstate Commerce Commission that the **automatic train stop** is the **only way to prevent wrecks.**

If indemnity in case of accidents can be secured against a railroad on the **ground** of **negligence** in not having the block signal installed, as shown in the February edition of the "Signal Engineer," **what chance has a road to escape** the **greater penalty** for not **installing** the **Automatic Train Stop which** is the **universally recognized protection?**

The automatic train stop has proven to be the **greatest desciplinarian. It protects** the **long faithful employes** from the **mistakes** they **naturally will make,** and the **employer** from the **loss** of **his best men** in trying to effect the **present day impractical** discipline.

Our device can be installed at a **minimum expense** in the **closed circuits** of the present day unreliable distant signalling system and **make** it **absolutely safe, or** independently, including local signals superior to the present block system, for **one-half** the **cost** of the latter.

This device is a **convenience,** and a **practical insurance against accidents** that **no railroad** can **afford to be without.**

We stand ready to demonstrate every claim made for our device on any railroad at our own expense.

The Wooding Railway Warning Device Company

B. F. WOODING, President, Denver, Col.

See illustrations and descriptive matter in the Jan. No. Models on exhibition, Grand Cent. Ter. N.Y. City.

Railway World

VOL. LVIII. MAY, 1914 No. 5

Important Developments in the Transportation Field

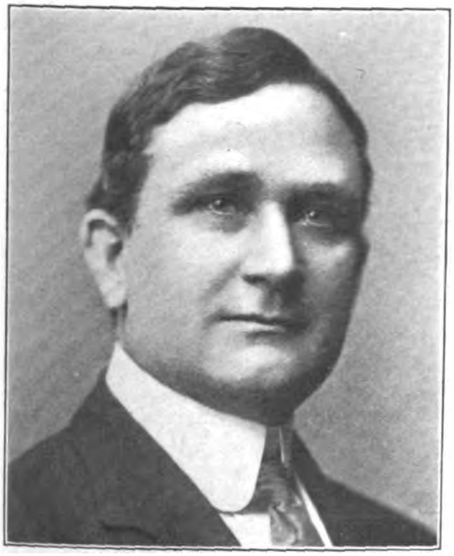
THE NECESSITY FOR THE RATE ADVANCE

Judged by expressions appearing in the daily press throughout the country, the Eastern roads have proved conclusively the necessity for the five per cent increase in their freight rates for which they have petitioned the Interstate Commerce Commission. They have presented an array of facts and conclusions which it is safe to say has convinced the majority of those who have followed the case that, due to larger operating expenses, caused by heavier taxes, higher wages, expensive regulation, greater costs for materials and other increased expenses which have been set forth in detail in the various statements presented to the Commission, net returns are no longer such as to permit them to conduct a progressive transportation plant to the best advantage of an expanding commerce.

George Stuart Patterson,

General Solicitor of the Pennsylvania Railroad, who addressed the Commission on "The Needs of the Carriers for Additional Revenue."

Even Louis D. Brandeis, the special counsel for the Interstate Commerce Commission, in his closing argument, directly admitted that railroad revenues were less than would be desirable, in fact, less than enough to guarantee the ability of the transportation industry to meet the increasing demands of the public. Mr. Brandeis, however, with his usual utter disregard to the practical features of the case, suggests that the railways increase their income by greater efficiency of operation, by further economy, by curtailing the multiplication of free service and by increasing, if necessary, the rates on the particular classes of business now handled at a loss.



J. L. Minnis

General Counsel for the Wabash, who presented a special argument in reference to the meaning and purpose of our national laws regulating railroads.

It is inconceivable that at this time the Commission will give serious consideration to such recommendations. They at least understand the urgency of the case, and appreciate its practical necessities. It, of course, lies within their province, and is, in fact, their duty, to gradually bring about such readjustments of rates as will establish a proper balance among the various industries of the country. This they have been doing for a number of years and must continue to do perhaps indefinitely, but to inject this consideration into the present controversy as a remedy for the difficulties under which the railways are now laboring, is to have but a small appreciation of the real requirements of the case. Everyone who knew Mr. Brandeis, or was familiar

George F. Brownell,

Vice-President of the Erie Railroad, who addressed the Commission on the economic justification for the increase in freight rates.

with his methods, expected he would revert to his pet hobby of greater economy or efficiency. He has, however, been largely discredited, so far as the practical application of his suggestions to railway operations are concerned, and the Commission is not likely to take seriously his recommendations.

The railroads appreciate, as does the Commission, that greater economy and greater efficiency are still possible in railway operations. In fact there are few branches of trade or business to which such a general statement does not apply with equal or greater force. Few doubt, however, that at the present time, the railways are making every legitimate effort to conserve their revenues, and no one but a desk economist would present such an argument as a remedy for the alarming depletion in railway net earnings of recent months.

Everything that experience and training can do to keep down railway expenses is now being done. In the meantime the entire country is suffering. The railways and their allied industries represent the biggest medium of exchange which the country has. This medium has become so impaired as to affect every part of the industrial fabric. Practically no new railway work is under headway or projected, supplies are being bought only on the basis of immediate necessities, and improvements have largely been abandoned until the development of more favorable conditions.

Whether the railways win their case or not, and it seems inconceivable that the Commission will not grant the relief asked, they have made a gain in public estimation which should stand them in good stead in future efforts to conduct an efficient plant. They have been absolutely frank in their public statements and, believing their cause to be just, have neglected no opportunity to inform the people regarding the true state of affairs. They have conducted an open, but aggressive, publicity compaign and have put their case before the bar of public opinion as well as before the Interstate Commerce Commission.

Public opinion has responded in a most encouraging manner, and is solidly behind the carriers in their efforts to procure a living rate. Certain politicians have attempted to deprecate these efforts, but as self-preservation is the first law of nature, their belated tirades have met with but little sympathy. As the Philadelphia *Ledger*, in an editorial of April 7th, puts it:

"One of the very best things the railroads have done recently was to inform the public about their own business. They did this through the issue of a great number of statements. It was a campaign of education that shed light upon rates and needs, wages and earnings, income and outgo, about which the public, which foots all the bills, was ignorant.

Louis D. Brandeis,

The Commission's Special Counsel, who admitted in his closing argument that railroad revenues were less than enough to guarantee the ability of the transportation industry to meet the increasing demands of the public.

"Senator LaFollette, who seems to regard a railroad as a public enemy, points to this campaign of enlightenment as a deep-dyed offense. He brands it as an attempt to sway opinion. He challenges the right of the carriers to present their own case in this frank and open manner.

"All the precedents are against the Senator. A murderer on his way to the gallows has the right of legal defense. The thief cannot be deprived of the privilege of every American to present his own side of the case.

"Private citizens may legally combat an increase in taxation or carry on a campaign for the protection of their own property. A manufacturer may rightfully antagonize tariff legislation that will jeopardize his own interests.

"Since when have the several million people who own American railroads been deprived of rights enjoyed by all other residents in this republic? Who took from them this privilege of being heard, guaranteed by the Constitution?

"In conducting their campaign of publicity the railroads have done exactly what the Senator himself has urged for political campaigns. A policy of silence in the present instance would have been imbecility. A couple of million property owners cannot be muzzled."

The railways have undoubtedly won their case before the bar of public opinion and it is to be hoped before the bar of the Interstate Commerce Commission. It remains, however, for the latter to rise fully to the occasion and grant the full five per cent increase which public opinion and fair dealing demand and upon which the prosperity of the country, in no small measure, depends. The conditions referred to by Mr. Brandeis and others are matters for future consideration and should not be permitted to confuse the real issue.

THE EFFECT OF A FAVORABLE DECISION

So far as railroad officials are concerned, the hope is generally expressed that the Commission will act favorably and promptly grant the full five per cent advance, or its equivalent. The belief is universal that the effect of such a decision will be most favorable, not only to the railroads but to general business. To be beneficial, however, it must be promptly granted and of such a character as to enable the carriers to begin to procure the benefits therefrom at once. It is believed by many that a ten per cent increase is really nearer what is necessary to permit the carriers to accomplish the best results both for themselves and the commercial and industrial interests.

CLIFFORD THORNE,

Chairman of the Railroad Commission of Iowa, whose injudicial attitude in connection with the advance rate case has led to wide spread criticism in the public press.

Nevertheless, the moral effect of a five per cent increase is fully appreciated and favorable action on the part of the Commission would undoubtedly encourage the railroads to modify their present policy of strict retrenchment. The railroads have now been waiting for months for a decision in the rate case and during this period, have been inactive along many lines. Favorable action is likely to mean almost the immediate contracting for or purchase of a large quantity of supplies and for renewed activity in the financial markets.

That which is hoped for from the rate advance, even more than the additional revenues to be procured, is the effect it will have upon the restoration of railway credit. Fresh capital is urgently required for facilities long neglected and for improvement and construction work which is being increasingly demanded as the months slip by. It has been variously estimated that the railroads require from $600,000,000 to a billion dollars yearly for additions, betterments and to maintain the standard necessary to economically and efficiently serve the public.

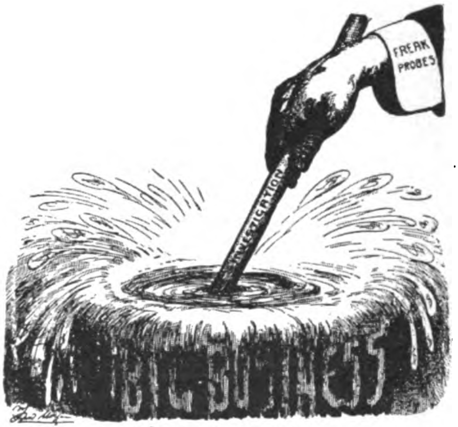
If a favorable decision by the Commission will re-establish railway credit to the extent that the tremendous amount of money needed the next few years for improvements and betterments can be procured, it is not hard to understand the vital effect of such action upon the prosperity of the entire nation.

It is no exaggeration to state that, at the present time, the business of the country is looking anxiously towards Washington with the hope that the Commission may find it possible to support the railways to the extent which will permit them again to become a stimulating influence in the financial and business world.

PUBLIC SENTIMENT AS REFLECTED BY CARTOONS

Another striking evidence in this change of public sentiment towards big business and the railroads is expressed in many of the cartoons which are appearing in the leading dailies.

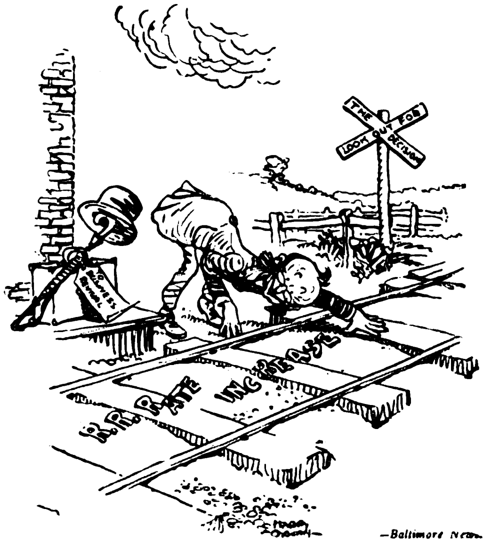
It was only a comparatively short time ago when cartoons in support of these interests were so rare as to pass practically unnoticed. To-day they are appearing eveverywhere and they voice in no uncertain terms the antagonism which is rapidly developing towards constant and unnecessary interference with business by the Government. They may be likened to the handwriting on the wall of Biblical record which it would be well for the average politician to make an effort to interpret. The accompanying cartoons are fair examples of those which are appearing in a large number of dailies in many important cities of the United States.



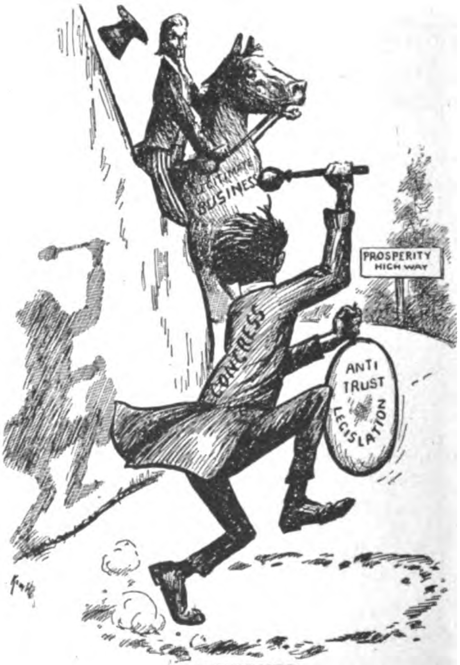
Copyright, 1914, by The Philadelphia Inquirer Co.

STIRRING TIMES, THESE—A GREAT DEAL TOO STIRRING!
From the *Inquirer* (Philadelphia)

"Believe I Hear It Coming"-

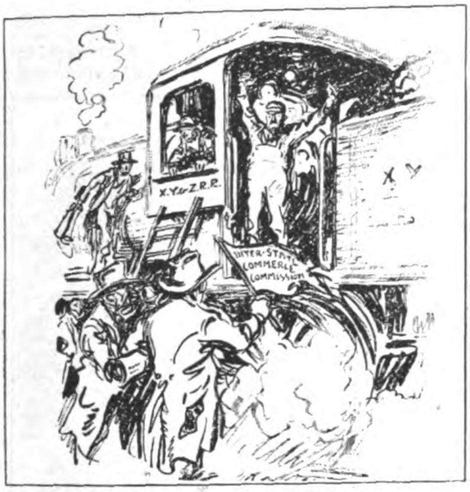


—Baltimore News

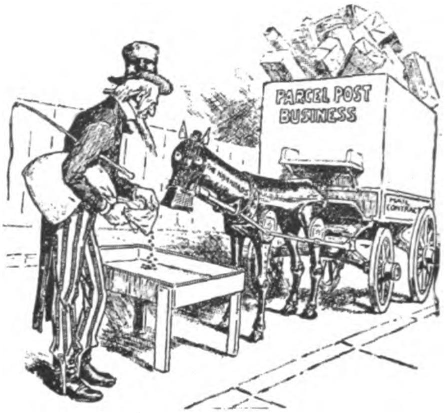


FRIGHTENED.

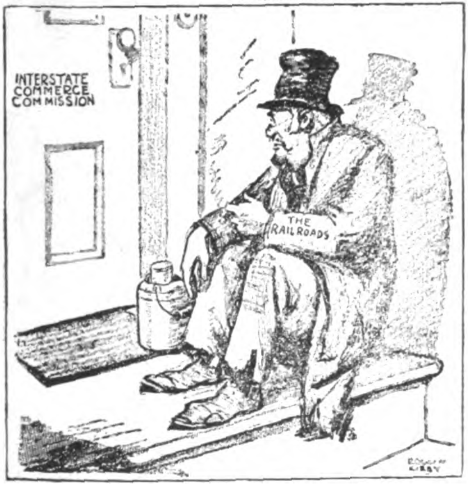
—*Leslie's Weekly.*


X.Y. & Z.R.R.
INTER-STATE COMMERCE COMMISSION
X Y

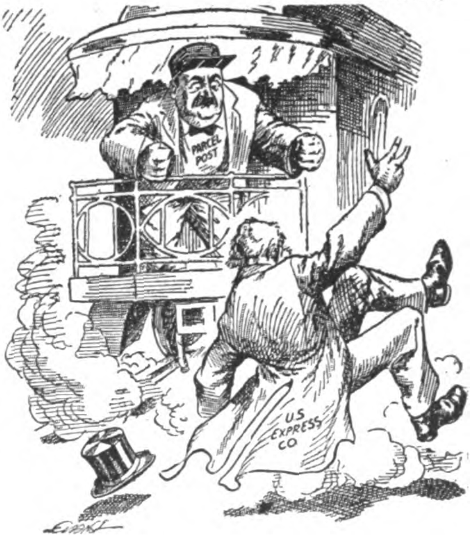
THEY CALL THIS REVOLUTIONARY IN MEXICO.
—Cesare in the New York *Sun*.


PARCEL POST BUSINESS
POSTAL CONTRACT

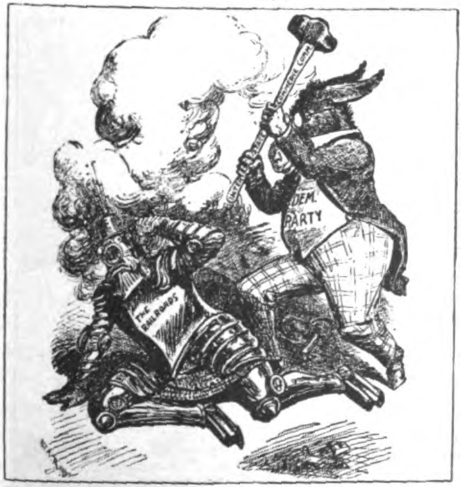
STARVING HIS HORSE.
—*Philadelphia Record.*


INTERSTATE COMMERCE COMMISSION
THE RAILROADS

MORE WATCHFUL WAITING.
—Kirby in the New York *World*.

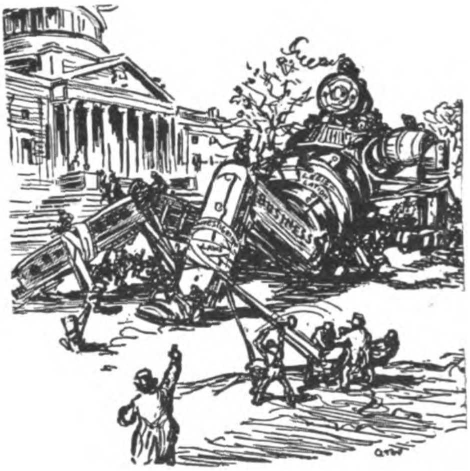

PARCEL POST
U.S EXPRESS CO

CROWDED OFF.
—Baltimore American.

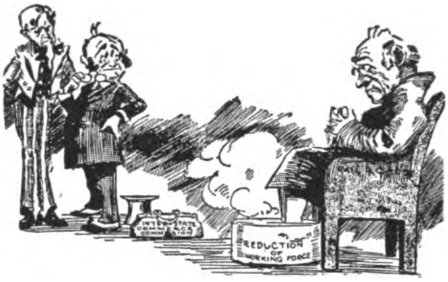

DEM. PARTY
THE RAILROADS

Copyrighted by the New York Herald.

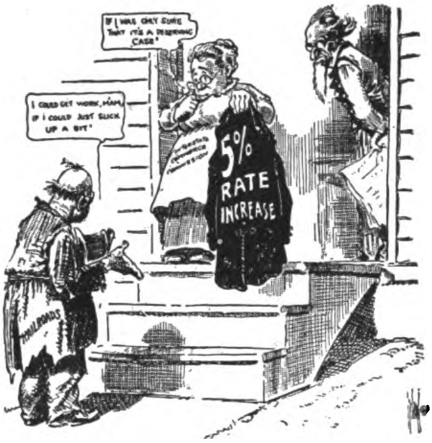
AFTER THE RAILROADS ARE REDUCED TO JUNK, THEN WHAT?
—Rogers in the New York *Herald*.



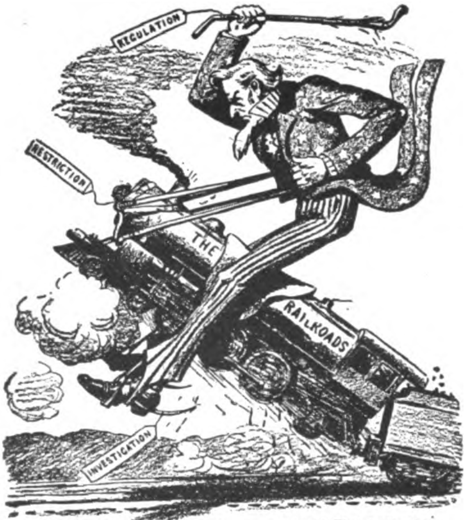
BOUND
From the *Sun* (New York)


INTERSTATE COMMERCE COMMISSION
REDUCTION OF WORKING FORCE

Uncle Sam: "Don't you think you've had the case long enough to diagnose it?"—*New York Times.*

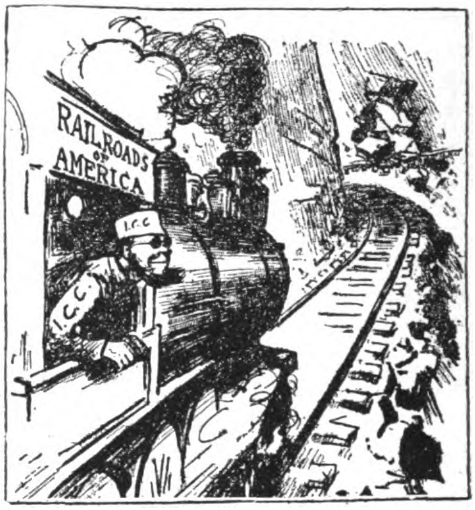

IF I WAS ONLY SURE THAT IT'S A DESERVING CASE
I COULD GET WORK, MUM, IF I COULD JUST SLICK UP A BIT
5% RATE INCREASE
RAILROADS

WILL SHE LET HIM HAVE IT?
From the *Dispatch* (Columbus, Ohio)


REGULATION
RESTRICTION
THE RAILROADS
INVESTIGATION

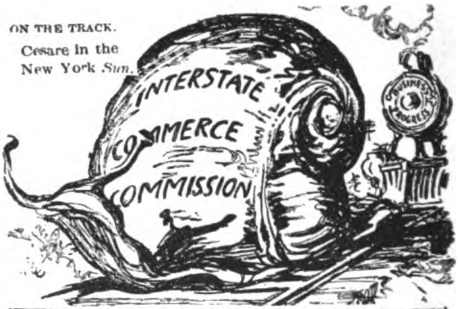
ROUGH RIDING THE IRON HORSE
From the *Eagle* (Brooklyn, N. Y.)

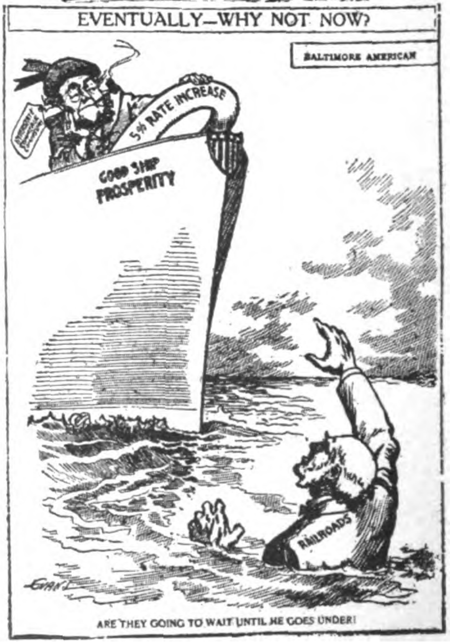
THE BLIND ENGINE DRIVER


RAILROADS OF AMERICA
I.C.C.
I.C.C.

There May be Danger Ahead, But What Recks Her
—From the New York Herald.

ON THE TRACK.
Cesare in the New York *Sun.*


INTERSTATE COMMERCE COMMISSION
BUSINESS PROGRESS


5% RATE INCREASE
GOOD SHIP PROSPERITY
RAILROADS
GALE

EVENTUALLY—WHY NOT NOW?

BALTIMORE AMERICAN

ARE THEY GOING TO WAIT UNTIL HE GOES UNDER!

THE HIGH COST OF RAILROADING

The high cost of living has hit the railroads, and has hit them hard, according to some recent figures issued by the Lehigh Valley Railroad. Taking a period of fifteen years, from 1898 to 1913, the Lehigh Valley shows with figures from its own books that all items of expense have increased astonishingly. In some cases expense has doubled.

Take the important question of the track. The maintenance of way per mile of track was $725.66 in 1898. Last year it was $1,524.13, more than twice as much. This is principally due to more expensive and heavier rails, ties that have almost doubled in price, heavier ballasting and the increased cost of labor. The necessity for a heavier track to carry heavier equipment has, of course, had something to do with it, and, then, again, creosoting ties has also doubled their cost, making the cost of ties to-day four times what it was fifteen years ago. Per mile of road the same proportion holds, the expense having jumped in fifteen years from $1,474.47 a year to $3,924.56.

A wooden passenger coach used to cost $8,000. The new steel coaches, which the Lehigh Valley is using, cost $12,000. Meanwhile, however, there is the undoubted assurance that they are safer.

A standard freight locomotive costs $25,000, where it cost only $15,000, in 1898. Repairs have jumped in proportion per locomotive from $1,508.05 a year to $2,692.36. This is largely offset, however, by the increased tractive power of the standard locomotive.

Where the high cost of railroading is most apparent though, is in general repairs and renewals. Here the increased cost of both material and labor shows convincingly. On a passenger car this item has increased from $510.27 to $824.15. On a freight car it is now $70.06, where it was $31.69 fifteen years ago. For locomotives there is the difference in the cost of upkeep between ten cents and four cents per mile.

In these items, labor, of course, is counted in. This has figures for all railroads as a ten per cent increase. In the operating of trains it is much more than ten per cent, however, as the engineers, conductors and trainmen have had the biggest increases in pay, and the full train crew bills in passenger runs increased the payroll by 40.2 per cent.

The interesting part of the comparison is that these extra expenses have been largely met by efficiency and better methods of railroading. It has been impossible to meet them entirely and that is why the railroads have been asking for a five per cent increase in freight rates, but it is remarkable how much the railroads have done in the face of the big expenses. As fast as they can, they are replacing wooden cars with steel cars, costing half as much again, their roadbeds are far ahead of what they were fifteen years ago, and anyone who ships freight knows that the freight service of today is so far ahead in promptness and certainty that there is no comparing it with fifteen years ago.

BUSINESS AND THE GOVERNMENT

There is a growing indication of a widespread antagonism among business men towards further interference with business by governmental authorities. The situation has become strained and the average merchant is beginning to feel the effect of the uncertainty which hangs like a pall over the entire country.

The present Administration, however, is showing no real inclination to lessen its field of activities, and this attitude, now that it is becoming more fully understood, has aroused a storm of criticism. Even the smaller business man is beginning to realize that unnecessary interference with big business has a direct bearing upon his welfare, and he is rapidly becoming more critical towards governmental activities.

The following paragraphs taken from a recent address delivered by Mr. Frank A. Vanderlip, president of the National City Bank of New York, at the dinner of the American Cotton Manufacturers' Association held in that city on April 27th, well summarizes the situation. As he points out, there is just one way to bring about a renewal of business prosperity and that is through a more enlightened public opinion, which will leave no doubt in the minds of legislators and regulators that business must be left free to develop along legitimate lines untrammeled by the red tape and bureaucratic methods which are so characteristic of governmental activities, and which inevitably result in inertia and stagnation. For years Government officials have struggled to conduct their business in such an atmosphere, but to permit it to permeate the gen-

FRANK A. VANDERLIP,

President of the National City Bank of New York, who sees a danger to national prosperity in the growing tendency of the Government to interfere with legitimate business activities.

eral business situation, would prove disastrous. To quote Mr. Vanderlip's address:

> We are to-day a nation grown critical of business methods and resentful of business accomplishment. By far the greater part of governmental energies, as related to business, are directed toward destructive rather than constructive and creative ends. Business men have been called to account by Congress, commissions and courts, and are being punished for past deeds and hampered in present activities. The managers of railroads, although they have given to the public an average freight rate much less than what similar service costs in other countries, are bound with ever increasing bonds of hampering regulations, and are held to the strictest accountability for any failure of administration which falls below a hundred per cent of efficiency. Directors of railroad property are told what they owe to the people in the way of wise and efficient management, and in spite of results attained, with which the results in no other country are comparable, they are held up to the public almost in the light of criminals, compelled to perform their daily task under the regulating eye of agents of the government. If that is a fair measure of the duty to society which the managers of public utilities may rightfully be expected to perform, and I do not wish to be considered as denying that the public has a right to exact wise and efficient management, then why should not society demand wise and efficient conduct of the great agencies of production? If a railroad manager is culpable and is answerable to society for anything less than a hundred per cent of efficiency what of the farmer and planter, holding the great agency of production—land—and utilizing it with but forty per cent of efficiency? That is the indictment that stands against no small part of the agricultural community—a conduct of their business on a basis of forty per cent of efficiency. It will not do to say that railroad managers and corporation heads are the representatives of publicly subscribed capital and are therefore subject, in the interests of society, to a surveillance that applies only to the affairs of a public corporation, while farmers represent only personal investment and may be left to work out with such ignorance or intelligence as they choose to bring to bear the conduct of their own affairs. Farmers and planters also owe something to society in the way of intelligently conducting their business. They hold the means of production in their control. The public interest and the common good demand that they exercise that trust with intelligence, efficiency and thrift, quite as rightly as does public opinion demand efficiency and honesty in business administration. Prices of produce go up in answer to the inexorable law of supply and demand; values of the great agency of production—farm lands—have risen in our memory two or three hundred per cent, not because those lands were more efficiently managed, but because the demands of hungry mouths and backs to be clothed have made prices that permitted such increased values, even when not accompanied by increased efficiency of management.
>
> Is it not time for the maligned business man to direct some attention to the honest farmer, and to ask whether the people, whose demands the politicians are so fond of formulating, should not have directed against them and their small business methods some of the same analytical criticism that has been the order of the day to direct against big business?
>
> I believe that as a nation we have for some years been attacked by a hysteria of criticism against big business, until a majority of the people have come to believe that the way to secure prosperity is through legislation, instead of through intelligent hard work, improved methods, and a scientific application of the best knowledge to their own business. If you can do anything to direct the attention of the cotton planters of the South, or of the farmers of the whole country, to the fact that the fundamental cause of the high cost of living is not to be found in the offices where big business is managed, but rather in the ignorance and inefficiency of management of their own farms and plantations, you will have done something to clear the atmosphere and to enable us some time to get started on a new period of true prosperity.
>
> The particular men who happen for the moment to be occupying official position in Washington and elsewhere, and who are laying unbearable hardships upon the proper development of business in the United States, are not perhaps primarily to blame. The blame lies back of them in an ill informed and frequently unfair state of public opinion. We have had a period of magazine and political muckraking which has brought about a condition where business success is looked upon as a crime, where the man who has demonstrated that he can manage his business well is excluded from public counsel and where no small

part of our government affairs have been put into the hands of men who would be incompetent successfully to manage modest business affairs.

It is idle to rail at the public representatives of one party or another, or at one administration or another. We have got to get back of all that and create a sounder, a more intelligent, and a more honest public opinion. That cannot be quickly done, and it will never be done by a policy of silence on the part of those who represent important business interests. You have got something to do besides run your cotton mills. You and other business men must wake up to the fact that you have a public duty in the education of public opinion, and so long as you refrain from exercising it, you will not only hinder the industrial and commercial development of this whole country, but you will very directly permit your own business to be misunderstood and to be made the subject of unfair and uneconomic legislative attack. We are in a period of industrial and commercial depression.

The marvel is not that in spite of our great resources we are in such a period, but rather, with the terrible misunderstanding and misconception on the part of public opinion, that under a popular government, we are not in a condition of much deeper depression.

I regret that I cannot at the moment see any marked tendency in the direction of business improvement. We have the promise of great crops, although there is much uncertainty between such an early promise and ultimate fulfillment. Should there be complete fulfillment of that promise, it would, of course, temporarily, at least, bring with it improvement. We may be permitted an increase of railroad rates, and that would be doubly helpful, first on the side of its direct benefit, but even more on the side of a promise of fairer treatment. Business conditions are unsatisfactory, however, on account of fundamental reasons that are deeper than can be cured by one or both of these factors. The incentive for business men to take new risks, to expand their activities, to lead them to the inception of new or greater enterprises has received a serious check from the unfair attitude of public opinion as exemplified in Congress, by commissions, and in the printed page that reflects and molds the state of public opinion. I do not believe that we can hope for permanent relief from the unsatisfactory position in which business is now placed until we can get a public opinion that more truly reflects a fair attitude, based on correct economic principles. It seems to me the highest duty of business men, particularly such an influential group as is represented here, to contribute the best that is in them toward the creation of a wiser, a sounder, and a more intelligent public opinion in regard to business affairs. That can neither be done by silent acquiescence, nor by dissatisfied grumbling at existing tendencies. You must take your active part in forming public opinion. It is time for business men to speak out. Where errors and mistakes have been made, let them be frankly acknowledged, but insist upon a better understanding of your methods, your problems and your aims. Let your voice be heard and your views expressed with frankness and honesty, and we may then hope that an intelligent and informed public sentiment will give to business men fair play, and to business an enduring foundation upon which sound prosperity may be solidly built.

TO REGULATE THE ISSUANCE OF RAILWAY SECURITIES

The country at the present time is passing through a period of depression unequalled during the past decade. Business is practically at a standstill and severe distress is manifested in some quarters.

Rightly or wrongly there is a growing distrust among business men towards the present Administration and the recent introduction of additional trust legislation into the National Congress has not tended to lessen this feeling. Undoubtedly the country has not yet felt the full force of the new tariff law. While drastic readjustment can already be directly traced to it, the full effect of its influence will not be felt for some time to come.

The currency legislation represents about the only helpful and constructive measure of improvement to our general prosperity which has become a law under the present Administration. All that was crude and dangerous in this bill was largely eliminated through the united and vigorous opinion of the banking interests of the country. Unfortunately, however, there is no such check in sight in connection with the proposed new anti-trust bills which, in their present form, are crude, unworkable and dangerous and which have only added to the feeling of distrust everywhere manifest. It appears to be the President's attitude to settle the trust problem as soon as possible, because of its adverse effect upon business, enterprise and confidence. It might be pointed out, however, that it would be far better to leave the question unsolved than to attempt to handle this vast and intricate question, in which the welfare of the entire Nation is involved, without giving it the study and consideration which it demands and which can only be properly handled through the investigations of an expert board or commission whose recommendations should be employed to frame legislation of a constructive and salutory character, as well as containing the necessary regulative features.

Of the three anti-trust bills covering the subjects which President Wilson is pressing for legislative consideration, the last was introduced into the House of Representatives on May 7th, and covers federal supervision of the issuance of stocks and bonds by railroads. While the bill contains many provisions which are being severely criticised, railroad officials, as a body, do not object to some National supervision of the issuance of their stocks and bonds. Various States already have this power and there has developed a conflict of interests which can be largely eliminated by centralizing the authority over future financial transactions of this character. Several provisions of the bill, however, go far beyond the question of bond and stock regulation, and are believed to be fraught with danger to many important railroad corporations. The dominating features of the bill are summarized as follows:

First. A provision requiring railways, before issuing stocks and bonds, to obtain authority for such issues from the Interstate Commerce Commission.

Second. A provision requiring full publicity, through the Interstate Commerce Commission, of all facts bearing on the issue of railway stocks and bonds.

Third. A provision making it unlawful for any person to hold the position of officer or director of more than one railroad.

The last of these provisions reads as follows:

Unless the previous approval of the Interstate Commerce Commission shall have been secured it shall be unlawful for any person to hold the position of officer or director of more than one carrier subject to the act to regulate commerce.

This last provision would apparently afford the Interstate Commerce Commission means of ordering the dissolution of practically every railroad system which is made up of more than one line.

The bill further provides that it shall be unlawful for any railway corporation to issue any capital stock or certificate of stock, or any bond or other evidence of indebtedness, or assume any other obligation, "unless and until, upon application and after investigation by the Interstate Commerce Commission of the purposes and uses of the issue, and the proceeds thereof, such issue is approved by said Commission as necessary and appropriate for the purpose stated in the application." The only exception made in the application of this prohibition is in the case of one year notes issued by railways to an amount not exceeding five per cent of its outstanding stock and bond obligations.

Any person or persons who issue stocks and bonds contrary to the procedure laid down by the bill may be fined not less than $1,000, nor more than $10,000, or be imprisoned for not less than one year or more than three years, or by both such fine and imprisonment in the discretion of the court.

The provisions of section 20 of the rate act relating to the filing of reports by railways would be re-enacted. They are supplemented by a requirement that such reports shall hereafter include all information "regarding the issuance of stocks, bonds, and other certificates of indebtedness."

In seeking authority to issue new issues of stocks and bonds, the railroads are required to furnish this information:

First—The amount heretofore issued and the additional issues desired to be made.

Second—The amount held in the treasury of the railway as a free asset, or pledged, and if pledged, the terms and conditions of such pledges.

Third——The number and amount of prospective issues to be sold, pledged, or held as a free asset; the terms of sales and conditions of any pledge or pledges that may have been made.

Fourth—The preferences of privileges granted to the holders of any shares; the dates of maturity, rates of interest, and any conversion rights granted to holders, and the price, if any, at which such shares or bonds may be redeemed.

Fifth—The purposes, in detail, to which the proceeds of the issue are to be devoted.

Railways that refuse or fail to make reports as indicated shall be subject to a forfeiture of not less than $100 or more than $5,000 for each offense, and $100 for each day of the continuance of the offense. Any officer who fails or refuses to make reports in details as outlined is to be deemed guilty of a misdemeanor, and subject to a fine of not less than $1,000, nor more than $5,000, or imprisonment for a term of not less than one year nor more than three years, or both such fine and imprisonment.

On May 11th, representatives of railroads appeared before the Senate Committee on Interstate and Foreign Commerce to protest against this new bill. The delegation was headed by Robert S. Lovett, of the Union Pacific Railway, and A. F. Thom, chief counsel for the Southern Railway. The application of the bill's prohibition against interlocking directorates to railroads, they declared, would mean the disruption of all the great railway systems of the country.

The critics of the bill took the view that there might be ample ground for forbidding the interlocking management of great industrial corporations, whose affairs ordinarily were clothed with secrecy, and who might through common officials, work material wrongs to the public without detection. But the railroads they pointed out had no secrecy. The harm a railroad could do would be a wrong in rates and conditions of traffic, they said. But these wrongs were already prevented by the powers vested in the Interstate Commerce Commission.

A flat prohibition of interlocking control, they argued, would simply tear systems asunder and divorce all branch lines from the parent trunk.

The other witnesses were Samuel Rea, president of the Pennsylvania, and Frank Trumbull, chairman of the boards of the Chesapeake and Ohio and Missouri, Kansas and Texas Railroads. The witnesses represented 150,000 miles of railroad in the United States.

Mr. Lovett's statement was, in part, as follows:

> The enactment into law of this bill, in my opinion, would disrupt every great railroad system in this country. It would cause the greatest shock to railroad securities that has been felt in years.
>
> I recognize that there is a demand for some of this proposed legislation. I can see why the Government should not allow common directors in industrial corporations that compete, for they have secrets from the public. Railroads have no such secrets now, as the Interstate Commerce Commission has to give its permission to change rates. Therefore, the railroads should be dealt with separately. Railroads and industrial corporations are fundamentally different.
>
> If Congress is going to legislate on matters of this sort that legislation ought to be direct, making unlawful such interlocking relations, instead of merely barring a corporation that disobeys the bill's recommendations from interstate commerce.
>
> I find nothing in this bill that makes the election of a director of one company who is a director of a competing company unlawful. That is what the bill should provide.
>
> If it is to be the policy of the Government to abolish interlocking directorates, the law should be applied to individuals. If you would prohibit common directors, do it directly, and not in the way you propose here. This bill ought to be changed so as to distinguish between independent and subsidiary corporations.
>
> I believe that if this law is to be retroactive all great railroad systems in this country will be disrupted, and there will be the greatest shock to railroad securities ever known in the history of the United States. Great lines would have to dispose of their stock in subsidiaries.
>
> In my opinion, Congress should let stand the railroad systems that now comply with the provisions of the Sherman law and not make this bill retroactive.

ESTIMATED COST OF RAILWAY VALUATION

Recent results obtained by the Lehigh Valley Railroad in procuring a physical valuation of its property, are of more than usual interest at the present time in view of the larger work now just beginning, of procuring a similar valuation for the country's entire railroad system. The work of procuring the physical valuation of the Lehigh Valley was carried on by W. J. Wilgus, a civil engineer of New York. In testifying before the Interstate Commerce Commission Mr. Wilgus stated that it would cost approximately $324,500,000 to reproduce this system. To procure this result it took one hundred men fourteen months at a cost of over $120,000.

So far as the Lehigh Valley is concerned, this places the cost of procuring the valuation on a basis of $100 a mile and applying this average to the railway mileage of the country, indicates that it will cost the transportation interests of the United States $25,000,000 to make the physical valuation of their properties to say nothing of the additional, but much larger cost of procuring the maps, reports, etc., that the Interstate Commerce Commission will require. Railway men who have studied this problem believe that in addition to whatever it costs the Interstate Commerce Commission to conduct its physical valuation work, the railroads themselves will have to expend in the neighborhood of $125,000,000, all of which will have to be paid for out of earnings. This estimate is based on investigations conducted by experts for some of the roads and includes the sum of $100,000,000, which it is believed the lines will have to expend in supplying the specified sizes and types of maps and reports, not now in existence, but which the Commission will require.

PARCEL POST DEVELOPMENTS

The controversy between the Postoffice Department and the railroads goes merrily on. In the meantime the carriers are being forced to perform a vast service for which they are receiving no proper remuneration.

As has been pointed out before in these columns, the Government's attitude is indefensible. It has not advanced a single reason why the railroads should not be compensated for the enormous additional service which they are now performing. Following general governmental methods, however, it has delayed action and befogged the issue by injecting new and irrelevant theories into the controversy, and has shown a glaring disregard to the injustice done the railways by the inexcusable delay.

Feeling as the railroads do, that every day's delay in rectifying existing conditions, is an accumulative injustice, the managers for the carriers have submitted to Congress a formal recommendation as to a definite system which should be followed in compensating the railroads for carrying the mails.

This plan embodies four principles, as follows:

1. That the mail should be weighed annually (instead of quadrennially) and payment made for the weight and distance carried.

2. That mail apartments in railroad cars, fitted up as traveling postoffices, should be paid for.

3. That the side and terminal messenger service, between railroad stations and postoffices, and other special services, should be paid for.

4. That all rates of pay and conditions of service should be definite and not subject to the discretion of employes of the postoffice department.

It is believed by railroad managers that the adoption of these general principles and establishing fair units of pay will remove this complicated subject from public controversy. It would also result in payment for carrying the parcel post. The present situation is unjust and ought to be corrected.

The great development has increased the volume and tonnage of the mails enormously, and has correspondingly intensified the burdens and responsibilities of the carriers and it is the feeling of railroad managers that as soon as the American people realize the anomalous and inequitable conditions under which the railroads now carry the mails, prompt action will be forthcoming from Congress to provide adequate compensation for the service procured.

In a recently published bulletin, the Committee on Railway Mail Pay representing 264 railroads carrying mails on over 218,000 miles of line, has summarized the recent congressional investigation with reference to railway mail pay, as follows:

The Act of Congress approved August 24, 1912, provided for a joint committee composed of three members of the Senate and three members of the House of Representatives to make inquiry into the subject of postage on second-class mail matter and compensation for the transportation of mails, and report at the earliest practicable date. The committee, when appointed, consisted of Senators Bourne, Richardson and Bankhead, and Representatives Lloyd, Tuttle and Weeks.

On September 11, 1912, Senator Bourne addressed an inquiry to the executive officers of all railroads carrying the mails—795 in number—asking for an expression of opinion on the plan recommended by the Postoffice Department and embodied in Senate bill 7371. This plan proposed to pay the railroads according to the number of linear feet occupied by the mails in cars, the rate to be based upon the cost to each of the 795 railroads for operating expenses and taxes, plus six per cent. The cost was also to be ascertained by the Postoffice Department.

The railroads generally replied that the underlying principle of the plan was not correct. The Postoffice Department had based its recommendations upon its own incomplete and inaccurate presentation of the railroad statistics for the month of November, 1909. Further, that a cost based only upon operating expenses and taxes, plus six per cent, omitted allowance for interest on the investment, and was, therefore, fatally defective. Further, that if the full cost was ascertained for each railroad, even then any plan which used this as a basis of pay would be complicated in operation and unjust in its application by failing to take into account the value of the service rendered.

Beyond all these considerations was the further fact that in this case the Postoffice Department—the shipper—was undertaking to determine the cost for itself; to prescribe the car space it would pay for; and to buttress its position by a new clause in the law making it compulsory on the railroads to carry the mails under penalty of $5,000 for each failure.

The Congressional committee opened formal hearings on the subject on January 28, 1913, and these were continued until May 14, 1913, after which opportunity was given to both sides to sum up the testimony. The railroads presented their summing up on June 26, 1913, but the Postoffice Department took six months additional and presented their summing up on January 16, 1914.

How the Railroads Are Underpaid.

In the meantime a statistical adviser of the Congressional committee, Dr. M. O. Lorenz, associate statistician of the Interstate Commerce Commission, made a report dated September 27, 1913, in which he reached the conclusion that an increase in railway mail pay of at least 10 per cent. was warranted, with the suggestion that the adequacy or inadequacy of the pay could be further decided by reference to the Interstate Commerce Commission.

The secretary of the joint Congressional committee, Mr. R. H. Turner, made a summary of the hearings under date of November 28th, and reached the conclusion that on the present system of pay the railroads are underpaid approximately $12,000,000.

The Second Assistant Postmaster General in his summing up of January 16, 1914, reiterated the position of the Postoffice Department, and on February 12, 1914, submitted a new plan of paying the railroad companies on the space basis at certain rates per car mile, but claiming for the Postoffice Department the power to prescribe the car space that would be paid for, full control of the railroad facilities under heavy fines which the Postmaster General might impose without limit, and reserving to the Postmaster General discretion to change the conditions under penalty of $5,000 fine for every failure of a railroad company to carry the mails.

In the original bill, Senate 7371, the Postoffice Department had abandoned the weight basis of pay in favor of space based upon cost to the individual railroad. In the new bill it abandoned the cost basis in favor of a space basis, which, while ostensibly associated with definite rates was left entirely within the discretion of the Postmaster General.

The railroads submitted to the joint Congressional committee on February 26, 1914, an earnest protest against the findings and conclusions of the Postoffice Department as set forth in its summing up of January 16, 1914, and as embraced in its new proposals of February 12, 1914. The Second Assistant Postmaster General replied in a lengthy statement of March 24, 1914.

The railroads made their closing statement on April 1, 1914, and the joint Congressional committee, after verbal discussion, closed the hearings finally on April 3d. The testimony, all taken under oath, is the most complete and valuable ever submitted on this important subject, and is comprised in pamphlets which already include about 1,300 pages of printed matter.

The Fair Basis.

The railroads' committee has studied this whole question for over four years. It has endeavored to regard the question from all sides. It has attempted to consider the interests of the people, of the Postoffice Department, as well as of the railroads. It has carefully examined the record of previous investigations and the various plans proposed for changing the method or the basis of pay. It has especially studied the suggestion that the present basis, i. e., the weight of mail transported multiplied by the distance it is transported,be abandoned, and that the basis of car space authorized be substituted therefor.

The railroads' committee has concluded that the original plan, as embodied in the law of 1873, is the safest and most enduring basis for all of the parties concerned. That the *weight* of mail carried and the *distance* it is carried represent the essential service rendered. It is, therefore, the most direct element upon which the pay should be measured and computed. The weight basis is also the most definitely ascertained basis and the one regarding which there can be no uncertainty. It is not subject to fluctuation, according to individual opinion. The car space plan of pay involves estimates based on individual opinion, and this would be dangerous to both parties.

The railroads' committee, therefore, adhere to the recommendations made on October 3, 1912, to the joint Congressional committee, as follows:

1. For the repeal of the Act of March 2, 1907.
2. For annual weighing and a definite and just method for ascertaining daily average weights.
3. For pay for apartment cars on some basis that will compensate for the service.
4. For a fair allowance to the railroads for side and terminal messenger service which they perform for the Postoffice Department according to the value of this service to the Postoffice Department.
5. That all rates of pay should be definite and not subject to the discretion of the officers of the Postoffice Department.

FURTHER OPPOSITION TO EXTENSION OF PARCEL POST

Attention was called in last month's issue to the growing opposition manifested among shippers towards a further increase of the parcel post weight limit. At that time a number of organizations had already passed vigorous resolutions opposing any further extension of the parcel post service, deploring any action which might tend to drive the express companies out of business. Recent developments indicate that this movement is rapidly spreading throughout the country, and resolutions continue to be passed by various trade organizations in opposition to any further extension of this service.

The San Francisco Chamber of Commerce, the largest and most influential commercial body west of the Missouri River, has adopted resolutions to this effect, while the Commercial Club of Omaha, the Board of Trade of Vicksburg, Miss., the Board of Trade of Elizabeth, N. J., The Oakland Chamber of Commerce of Pittsburgh, Pa., the Chamber of Commerce of Bluefield, W. Va., the Merchants' Freight Bureau of Little Rock, Ark., the Board of Directors of Everett, Mass., the Board of Directors of the Commercial Club of Lincoln, Neb., and the Buffalo, N. Y., Chamber of Commerce have joined those reported in last month's issue, as opposing the further extension of the parcel post service. As these organizations represent largely the individual shippers who would be benefited by such an extension, it is anticipated that the opposition as indicated by the resolutions passed by these various organizations and forwarded to members of Congress and to the Postmaster General, will for the present at least check the evident desire of the Postoffice Department to drive the express companies out of business.

THE OUTLOOK FOR EXPRESS COMPANIES

The liquidation of the United States Express Company has led to the belief in various quarters that there will be other eliminations from the ranks of the express field. While it is too early to draw any definite conclusions, some transportation officals profess to see a growing tendency in the direction of a unification of the express business of the country. As a step in this direction, it is pointed out there are already a large number of joint offices, and that tendencies in this direction are on the increase.

The *Wall Street Journal,* in commenting upon the probable effect of such an amalgamation, has had, in a recent issue, the following to say:

> Complete unification would result, it is said, in greater economy in practically all divisions of fast package transportation, particularly in terminal service, and increase efficiency by simplifying practices and eliminating interchanges. It would also mean, according to some transportation experts, a concentration of competitive effort on business over eleven pounds, leaving the less than eleven-pound business to the parcel post, where, according to these experts, under the changed conditions, it properly belongs.
>
> Furthermore, putting the express business of the country in the hands of one company, would be a development in line with what several members of the Interstate Commerce Commission, at the time of the investigation, were understood to believe would be a solution of nearly all the express problems before the Commission.
>
> Notable among these was Franklin K. Lane, then a commissioner, who directed the exhaustive investigation. He was personally known by many express and transportation men to favor such an amalgamation, and it is said by these that many of the questions asked by him were designed to uncover the minds of others on this phase of possible express business development.
>
> The chief determining factor as to whether an express company can afford to continue business, of course, will be the results of operation under the materially reduced rates in effect since February 1 last. Up to the present time, only an approximation of the operating results for the first month under the new rates is available, and the prospective result is not very encouraging. There has been an increase in packages handled, but the increase in revenue was not what was expected, compared with the new business done, and net results were still discouraging.
>
> It is not likely that any of the express companies will seriously consider the advisability of going out of business until the lower rates have had a fair trial. Express company officials believe that six or eight months ought to be sufficient to demonstrate how the companies are faring under the lower rates. The practical elimination of the United States Express Company from the transportation field will throw upward of $22,000,000 of business, measured bp oreating receipts, to the other companies, and if these companies can share in this additional business, on an operating privilege basis of about 40 per cent, or better, with the railroad companies, they stand a fairly good chance of making a profit out of it. Those in close touch with express company business believe that the companies now in the field will wait at least until the conclusion of operations this fiscal year, before giving any consideration to the advisability of continuing in business.

SUPPRESSING NOISE IN RAILWAY STATIONS

It is not hard to understand that, under normal conditions, a railway station would not be chosen as a favorable locality in which to woo the slumber god. The arrival and departure of trains, the incessant hum of voices, the transfer of baggage, the popping of safety valves and other noises indigenous to such a place, are hardly conducive to rest. However, it does seem strange that railroads, in providing modern sleeping cars and placing them at the convenience of passengers, at a considerable time prior to their departure, should not have adopted more effective measures, by which many of these noises, wholly unnecessary, might be suppressed.

It is encouraging to note that one important road has arrived at this conclusion. The Northern Pacific has recently issued an order that loud talking, ringing of engine bells, sounding of whistles, blowing off of steam and other avoidable noises, over which employes have control, are to be avoided and reduced, in the future, to a minimum, and that the coupling of cars at stations, setting out or picking up cars, are also to be controlled by signals and done as silently as possible. General instructions have been sent out from headquarters to trainmen, station agents and others to bear these facts in mind, and to reduce all avoidable noises and talk to the lowest limits during the night hours.

There is no doubt but that the traveling public will appreciate this effort on the part of the Northern Pacific, and it is suggested that other lines might adopt a similar policy to the advantage of their patrons and themselves.

THE STUDENT COURSE OF THE SOUTHERN PACIFIC

Salient facts about the Southern Pacific company's student course were pointed out by Norman Collyer, chief clerk to the president of the company, in a paper read before the Safety First Conference, University of Nevada, recently, Mr. Collyer explaining that the idea was conceived and put into effect by Julius Kruttschnitt, while vice-president and manager of the company; that it was first crystallized into syllabus form under the administration of Vice-President E. E. Calvin and that later it was extended, by direction of President Sproule, to embrace the traffic and accounting as well as operating departments, said, in part:

"To my knowledge, the Southern Pacific Company was the first railroad in the United States to adopt an orderly, systematic scheme for the development of executive talent through the medium of apprenticeship. There is nothing spectacular about the course. We do not claim to make superintendents and general managers over night. We are just trying to make all 'round railroad men in a new way.

"The aim of our student course is to give to young men in the employ of the company an opportunity to pass through different departments for the purpose of gaining such co-ordinated knowledge of the entire railroad as will fit them better to assume positions of responsibility. It is, in fact, a laboratory course wherein the student performs the actual work of the department to which he may be assigned, supplemented by a parallel course of reading in text books and periodicals.

"Briefly, the procedure is as follows: Upon appointment the student is first placed at a station of medium size for a period of six months. This is because the station agent handles both the beginning and the end of transportation. The student is expected to perform such duties as are assigned to him by the agent, and the agent is expected to afford him such diversified experience as will give him an all-around knowledge of station work, including ticket office, warehouse, baggage room, yard and the solicitation of business. Being an extra man, the student is not bound down to routine, but is permitted to distribute his time in such a way as to treat each feature with equal thoroughness.

"Next the student is assigned consecutively to maintenance of way, the office of the superintendent of transportation, motive power, train service, accounting department and tariff bureau, spending three months in each. This completes his second year as a student and he should now have a working knowledge of the several departments of the railroad and their mutual interdependence. At the student's option (subject to the approval of the management) he next elects to specialize in either operation and maintenance, passenger and freight traffic, or accounting. Completing his work in either of these, he is given, after his graduation, such special experience as is needed to fit him for a regular position; thereafter everything depends on himself.

Contemporary Opinion

The Truth Is Wanted.

(From the Providence (R. I.) Journal.)

A POPULAR impression that American railroads are greatly over-capitalized and that rates are lower on the Government-owned roads of Europe is effectively disproved by the facts presented in an address delivered recently by Mr. Slason Thompson, a statistician of reputation, to the members of the St. Louis Railroad Club.

Mr. Thompson takes the ground that there is absolutely "no possibility that the American people ever will experiment with the Government ownership of their railways unless they are completely hoodwinked by the stream of misrepresentation and malinformation regarding American conditions that flows through our legislatures, colleges and public prints." This statement is based upon conscientious study of American and foreign reports and personal observation of American and European railroads and practices. It is, therefore, a timely and valuable contribution on a subject about which much is said and concerning which there is little actual knowledge.

American capitalization, said to be extravagantly high, was $63,944 per mile in 1911, according to the figures of the Interstate Commerce Commission. To-day it does not exceed $65,000 a mile, and for every mile of track there is approximately half a mile of second, third and fourth track Abroad the capitalization is staggering in comparison with that of the United States— $114,145 in Germany; $145,294 in France; $134,966 in Austria; $126,886 in Italy; $190,914 in Belgium and $277,345 in the British Isles.

Mr. Thompson is emphatic on one point—that the foreign roads on the average are no better than ours—except, perhaps, in the matter of stations; he describes them as "toy roads." In Germany, for example, eighty-six per cent of the passenger cars have less than four axles and ninety-seven per cent of the freight cars have only two; automatic couplers are unknown and there are air brakes only on passenger and express freight lines. And the capital cost in Europe is increasing steadily because all betterments and impovements "down to the last blooming spike" are charged to capital.

The American practice is to put back a part of the net earnings into the property. This keeps the capitalization down, and at the same time American managers are giving the people rates one-half cheaper than those of the Government-owned roads and are paying much higher rates of wages. These figures leave no doubt as to the superiority of American facilities, and that American politicians would make any better showing than those of Europe is very doubtful; in fact, political management here might easily be worse than anything found abroad.

Mr. Thompson's presentation of facts showing that capitalization and rates here are far lower than in Europe merit the widest publicity. Public opinion should be based upon the truth instead of the wild assertions about "countless billions of water and rates that mean robbery" made by the irresponsible demagogues with which this country is afflicted.

Putting it Up to the People.

(From the Commercial and Financial Chronicle.)

IN their apparently self-conceived capacity of defenders of the people against railway aggression, the members of the Interstate Commerce Commission continue to step with great hesitation, but a decision is "expected" at some movable future date. This does not prevent their allowing Mr. Brandeis to keep close to them, notwithstanding he is quoted as admitting that "these higher rates seem to be required." The courtesy (or possibly the weariness) of the Senate has caused that body to adopt without discussion Senator La Follette's resolution calling on the Commission for copies of all communications, anonymous or otherwise, which it has received in regard to the pending case, and intended to "influence" its action thereon; he does not seem to fear oral communication, and Mr. Brandeis is regarded as an exception, being a sort of "counsel" sitting on the bench next the judges.

Presentation of the incontestable figures of expenses and net earnings continues on behalf of the roads, a subject on which nothing new can possibly be adduced; yet we remark once more that the final decision upon the future of transportation in the United States will be given by the private owners of capital who are to lend it or decline it for railway purposes and that they will certainly take full and selfish note of the outlook as indicated by such facts, for example, as that the Pennsylvania's increase in net operating income in the last ten years has been at the rate of not quite 2¼ per cent on the increase in its property investment in the same term. Some persons are estimating upon a possible enormous or even record-making wheat crop in this season. They may be over-sanguine and it is still early; but if these pleasant expectations as to cereal and other crops are fulfilled, there may be all the more trouble because of the carriers' inability to handle them. Is this worth treating as a factor to be considered, or shall we just say that the railroads will do as they "must," regardless of whether they can?

In the vernacular of the day, this subject is "up to" the people, or it will be so ere long. Mr. Elliott, of the New Haven, has been doing his utmost to inform and arouse them, and he is trying to move the stockholders of that road to exert their influence. If the Governmental authorities, he tells those stockholders, believes that a majority of the American people are not in favor of extending aid to the roads, such aid will probably be refused. Therefore, he says, "over 27,000 stockholders should express their opinions, for just a little help from the stockholders will make just the difference between success and failure." Then he adds a sentence which for sententious putting of an immovable fact and for pithiness we have never seen surpassed: "One of the troubles is that the railroads are being chased round the yard, and you know that a hen chased round the yard just to hear it squawk cannot lay eggs."

Here is a page of argument packed into proverbial form. The wayfaring man, though a fool, cannot escape seeing the point. This hen illustration should be passed along to and kept before the American people. Do they want, and expect, the railroad hen to keep laying eggs? If they think the country can get on without transportation eggs, or that the overworked though much-cackling Governmental hen can lay those more satisfactorily, the American people can continue applauding (or idly permitting) the chasing around. If they think otherwise, and if they need eggs (admitting that nobody cares for the hen per se) they would better call off the politicians who are doing the chasing.

Railroad Profits and the Small Investor.

(From the "Wall Street Journal.")

STATISTICS compiled as of the close of the last fiscal year on June 30th, or dates as near that as practicable, show for nine of the principal eastern carriers an increase of 19,000, or more than eleven per cent in the number of shareholders as compared with the year before. There has been liquidation in stocks since the middle of last summer, but not from the rank and file of stockholders. For example, the Pennsylvania Railroad had on April 1st, 89,602 shareholders, or 12,756 more than on the same date a year ago.

This company offered to its owners a ten per cent allotment of new stock during the intervening year. A large number of newcomers joined the ranks of Pennsylvania Railroad owners in that period and the average holdings were 6.69 shares to 111.44 shares each. Even during the turmoil of litigation and obstructed financing the New Haven passed through, in the calendar year 1913, its stockholders increased in number by 3,524 or fifteen per cent.

It is the rule for stockholders to increase and average holdings to decrease on falling prices; and the nearer prices approach the bottom of the "big swing" the more rapidly do small holdings multiply. A few persons outside the speculative area buy at high prices, but for every one such there are ten intelligent bargain hunters. This movement was less surprising following the stock market collapse of October, 1907, but the facts go to show that neither the narrowing margin of railroad earnings, nor slackness in industry, nor the threat of radical legislation, has seriously impaired the influence of prices over the mind of the average man with relatively small accumulations to invest.

Railroad Valuation Folly.

(From the "Boston Transcript.")

IF it is not too late for the Government to retreat from the project for the physical valuation of the railroads of the country—and we do not see why it should be—it ought to shelve its preparations and call the incident closed. It does not appeal to the business sense of the country. It is a purely academic enterprise that will have no practical results of value. The only effect of which we are sure is that it will add many millions to the burdens that the country and those who are compelled to furnish its revenues are already carrying. The estimated cost of the this so-called service grows the further we advance in the business. It was thought at the outset that twelve million dollars would cover it, but now it is represented that twenty millions will be needed. The probable cost to the railroads will be a much larger sum. There are more than a quarter of a million miles of these properties, and fifty million dollars are the lowest figures mentioned as their exaction for this inquisition. Some calculations put the amount at $125,000,000 and the cost to the Government twenty-five millions, almost half as much as it has cost us to build the Panama Canal.

"'But what good came of it at last?' quoth little Peterkin." That is something that no one can say in advance, and something that we believe will be of very doubtful demonstration when the work is completed.

The Canal Tolls Issue.

IN the Canal Tolls controversy, so far at least, as the general public is concerned, there seems to have been a lack of definite understanding as to the facts behind the issues involved. An article from the Springfield (Mass.) "Republic" on "The Canal Tolls Issue" which is reprinted in part below, points out the main issue very clearly.

"The national Democratic platform did endorse the exemption of American coastwise shipping from payment of canal tolls and the president did deliver a speech in the campaign which contained a passage that can be interpreted as approving that particular plank in the platform. The present about-face by the party and the president is to be justified morally on the ground that the nation's treaties are more sacred than political platforms. A president not only may change his mind, but should change his mind on questions of national policy if grave reasons of state, in his opinion, make the change advisable. In regard to observing treaty obligations, he should not hesitate to reverse his original position, moreover, if deeper study convinces him that his original views are ill founded.

"We assume that the president reversed his position and asked his party to reverse its position because he has come to believe, first, that the interpretation of the Hay-Pauncefote treaty upon which was based the exemption clause of the canal act is erroneous; second, that the nation's larger interests extending all over the world would be unduly sacrificed by stubbornly adhering to an interpretation which all foreign governments unquestionably believe to be a barefaced repudiation of an unmistakable treaty pledge.

"That the president changed his position because of the Mexican situation alone is very improbable. We must think of national honor. But there is a Japanese situation in the background. The Japanese have already questioned our government's interpretation of their treaty with the United States in regard to alien land ownership. Are they likely to accept a new treaty embodying American views on that subject if our government exposes its good faith to sharp attack in the matter of the canal tolls? Or are they so likely to acquiesce in our interpretation of the old treaty?

"The president would be a very poor statesman if he failed to appreciate the inestimable value of England's good will and cordial support of the United States in all the critical questions liable to arise in our relations with Japan. England is Japan's ally; without English support, Japan can do nothing aggressive in dealing with other western powers. Assume that the Mexican situation should finally force American military intervention—a contingency not so remote or improbable that it should not be provided for in the domain of diplomacy. Is it not clear that the military occupation of Mexico by the United States would present at least a temptation to the Japanese to take a more aggressive attitude toward this country regarding Japanese land ownership or Japanese immigration? Does not wise diplomacy dictate that in such an emergency England's support of the United States should not be in doubt one moment? Our Anglophobes are stupid folks. They assume that we can snub and kick England forever without having to pay the price of such treatment.

"England's unassailable claim to the same treatment the United States gets in canal tolls is based on this clause of the treaty of 1901, a treaty now in force:

"The canal shall be free and open to the vessels of commerce and war of all nations on terms of entire equality, so that there shall be no discrimination against any such nation or its citizens or subjects in respect to the conditions or charges of traffic or otherwise.

"Joseph H. Choate was embassador to England when the treaty was negotiated, and in a speech last month, he said:

"I venture to say now that in the whole course of the negotiation of this particular treaty no claim, no suggestion, was made that there should be any exemption of anybody. How could there be in face of the words they agreed upon? Lord Pauncefote and John Hay were singularly honest and truthful men. They knew the meaning of the English language, and when they agreed upon the language of the treaty they carried out the fundamental principle of their whole diplomacy, so far as I know anything about it, and in the six years I was engaged with them their cardinal rule was to mean what they said and to say what they meant.

"England has the largest merchant marine on the seas, and that marine gets subsidies only in the form of mail contracts. Our correspondent asks what benefit 'we' are to receive from the canal, after spending $400,000,000 on it, if our coastwise shipping must pay tolls? Who are 'we'? Prof. Emory R. Johnson, the foremost authority on the traffic questions of the Panama Canal, insists that exemption of coastwise shipping must mean increased taxation of the whole country, because without these tolls it will be impossible to make the canal earn enough to pay running expenses. If 'we' means all of us, then all of us will not be benefited by this special favor to a particular interest, for taxation must be imposed to make good the deficit in canal revenues.

"It is singular what emphasis is now being placed on the mere commercial advantages of the canal to American shipping. The truth is the canal was not built primarily for commercial reasons; it was built for military reasons, which the country saw in a flash when the Oregon had to round the Horn in the Spanish War. As a commercial enterprise the canal may never be a success; but, as Mr. Choate so well and truly said: 'From the time that this question of a canal through the isthmus or a canal from the Atlantic to the Pacific, whether through the isthmus or by way of Nicaragua or Tehuantepec or anywhere else, was agitated, the universal declarations of public men, of presidents and secretaries of state, and other public men on both sides of the Atlantic, were to the effect that the canal should be built for the benefit of mankind, on principles of universal equality of the vessels of all nations, and without any discrimination in favor of any nation.'"

The Influence of the Panama Canal Upon Coastwise Traffic.

MR. WINTHROP MARVIN, has recently made some timely observances in the London "Times" with reference to the stimulating effect of the Panama Canal upon American coastwise traffic. While our foreign trade carried in American bottoms, is practically of a negligible quantity, the preparation for the increase in coastwise trade, through the opening of the Panama Canal, has stimulated shipbuilding to such an extent that American ship yards have enjoyed in the past two years the most prosperous period of ocean-going steel shipbuilding in their history. In referring to the possibilities of this traffic, Mr. Marvin says:

"American preparation for active use of the Panama Canal is undoubtedly more ambitious and far-reaching than has been understood in Europe, where the American merchant marine is regarded as a negligible quantity. It is true that out of the hundreds of regular transatlantic liners, only six ships fly the American flag, which has become less familiar than the ensigns of Portugal or Greece in the great ports of the United Kingdom and the Continent. But the American coastwise shipping, which seldom, if ever, leaves its home waters, is a vast fleet, and is rapidly increasing, both in tonnage and efficiency. Out of the 7,714,183 tons of merchant vessels, as officially reported by the Bureau of Navigation, 6,782,082 tons are engaged in American trade, and only 933,101 tons are registered for foreign carrying. A large proportion of the coastwise fleet, or 2,949,924 tons, is being operated on the great northern lakes, but a still larger proportion, or 3,625,925 tons, is engaged on the Atlantic seaboard. The Pacific fleet is 963,319 tons. As a recent review of the subject has stated:

"'Our coastwise fleet of 6,782,082 tons compares impressively with the 1,380,057 tons of British shipping employed wholly or partly in the coastwise trade of the United Kingdom, or with the entire German merchant marine, in both foreign and domestic commerce, 4,503,095 tons; or with the total 2,088,065 tons of France, or with the total 1,452,849 tons of Italy.'

"The coastwise shipping of the United States amounted to 3,409,435 tons in 1890. Since that year it has doubled—an increase far greater than the growth in wealth or population. This native marine is now one of the most important and successful of all national industries, and its advance in the past decade has been more notable than ever before.

"Foreign built vessels, if owned by American citizens, can now secure American registry, but they may be operated only in the foreign trade. Domestic commerce is as strictly reserved to native shipbuilders as it always has been since the beginning of the Republic."

The Express Situation.

(From the "Express Gazette.")

FEBRUARY FIRST marked the beginning of a new era in the express business.

The Interstate Commerce Commission spent two years and a quarter of a million dollars investigating the business and complaints against it.

The principal complaint semed one to which many successful business men must plead guilty —making too much money.

It is believed the order of the Commission, as embodied in the new reduced rates, will prevent a repetition of that complaint, because those most closely following express affairs can see little opportunity for future profits.

It is not generally remembered that the right of express companies to exist was favorably passed upon by the United States Supreme Court in 1883, nor that express companies, as we know them, do not exist outside of North America.

In North America the work of the pioneer has preceded our wonderful development; and it would be difficult to find a pioneer who has not been aided in his work by the express.

The work of the pioneer profits him most when followed by development; he enjoys his profits in the belief that the risk and hardships of his adventure are titles to his reward. The express companies have done much pioneer work and have rendered invaluable aid in the country's development.

The new rates are adopted, not as a matter of choice, but of necessity. If, under careful management, they will return the cost of producing

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The Railroad Goat.

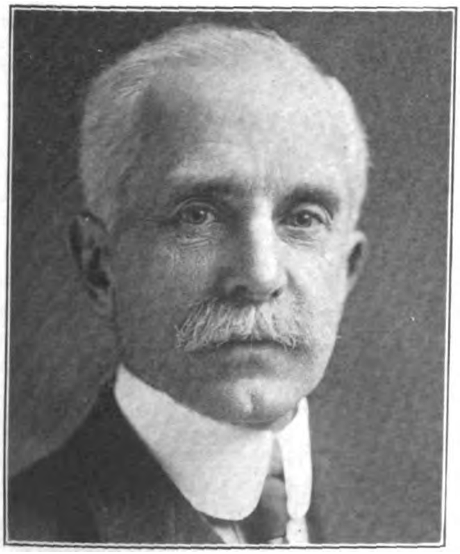
If a change in administration
Slows up biz throughout the nation—
Let the railroads "be the goat."
Make them carry parcel post
Even if it is a "roast";
Whoop it up by tons a day
Without a cent of extra pay.
Protests? File them all away;
Parcels post has come to stay.
Department books must show a gain.
Here's the slogan, written plain—
"Let the railroads 'be the goat.'"

If labor wins a higher wage,
And other costs becloud the page—
Let the railroads "be the goat."
Do not let them raise the price
Of transportation; 'tisnt nice,
Unless commissions hem and haw
Dilly-dallying with the law
For months and months. And all the while
Attacks are framed in every style,
Investigating this and that
Till dividends have fallen flat
And price of stock's too low to quote—
The railroads surely are "the goat."
—Boston News Bureau.

Personal

Edward T. Stotesbury.

EDWARD T. STOTESBURY, of Philadelphia, banker and director of many corporations, has been chosen to head the Reading System as successor to the late George F. Baer. He becomes president of the Reading Company and chairman of the boards of the Philadelphia and Reading Railway and of the Philadelphia and Reading Coal and Iron Company. Although Mr. Stotesbury, unlike his predecessor, will not hold the presidency of the two operating corporations, the railway company and the coal and iron company, his appointment as chairman of the boards of these two companies places in his hands direct power, little, if any, smaller than that wielded by Mr. Baer.


Edward T. Stotesbury.

How closely Mr. Stotesbury worked with Mr. Baer and how fully he may be expected to continue the latter's financial policies is expressed in the statement issued by the Board of Directors, as follows:

"As is well known, Mr. Stotesbury has been a member of the Reading board for a number of years, and has taken a great interest in the affairs of that company. His personal relations with Mr. Baer were very intimate and probably he, better than anyone else, was in a position to know the views which Mr. Baer held concerning the future of the properties which he had so long and so successfully managed."

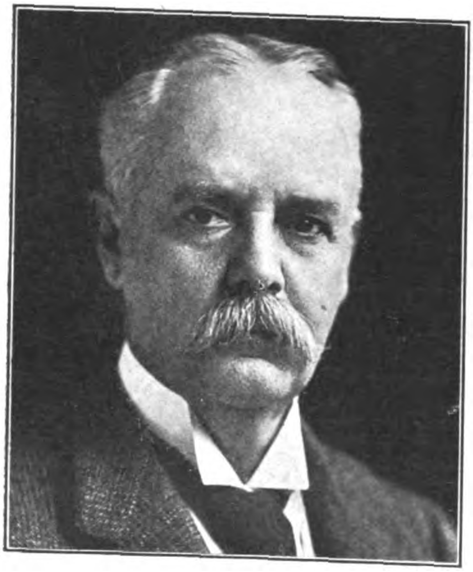
Mr. Stotesbury is 65 years old and a native of Philadelphia. He has been a banker all his business life and with the same house. He entered the banking firm of the elder Drexel when he was seventeen years old, and has risen to be the chief resident partner in this city of the

Drexel-Morgan firms and a member of the Morgan houses in this country here and abroad. He is conceded to stand second in seniority only to the present J. P. Morgan.

In addition to his banking connections, Mr. Stotesbury is a director in something like threescore of corporations, many of them of the first degree of importance and including the following: Central Railroad of New Jersey, Lehigh Valley Railroad, Baldwin Locomotive Works, Delaware, Susquehanna and Schuylkill Railroad Company, Franklin National Bank, of Philadelphia, Pennsylvania Steel Company and Philadelphia National Bank.

Theodore Voorhees.

THEODORE VOORHEES, who has been elected president of the Philadelphia and Reading Railroad to succeed George F. Baer, deceased, was born in 1847. He is a civil engineer by profession and has spent his active career in railway work. Prior to his connection with the Reading, he was associated with the Delaware, Lackawanna and Western, the New York Central and some smaller roads in New York State. He went to the Reading in 1893, as vice-president, holding this position until his recent election.



THEODORE VOORHEES.

W. J. Richards.

W. J. RICHARDS, who has been elected president of the Philadelphia & Reading Coal and Iron Company, was born in the coal regions at Minersville, Pa., and his connection with the anthracite coal business was almost a birthright. He first became associated with the Philadelphia and Reading Coal and Iron Company in 1882. Later he served in the Mineral Railroad and Mining Company, and the Lehigh and Wilkes-Barre Coal Company. In 1903 he was made general manager of the Reading coal properties and in 1905 became second vice-president. Two years later he was made first vice-president.

W. J. Besler.

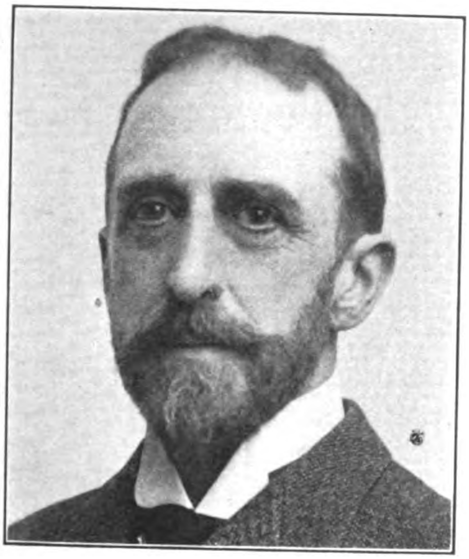
W. J. BESLER, who has been elected to succeed the late George F. Baer, as president and general manager of the Central Railroad of New Jersey, was born March 30, 1864 at Galesburg, Ill.

He entered the service of the Chicago, Burlington & Quincy Railroad in 1880, as trainmaster's clerk. He resigned in 1884 to attend the Massachusetts Institute of Technology, graduating in the class of 1888. Upon leaving college he returned to the Burlington and from 1888 to 1899 was consecutively yardmaster, chief train dispatcher, trainmaster and division superintendent. Mr. Besler left the service of the Chicago, Burlington & Quincy in 1899 and entered the service of the Philadelphia & Reading Railway, as division superintendent of their main line. A year later he was made general superintendent of the same road, and in 1902 was transferred to the Central Railroad Company, of New Jersey, as general manager. Mr. Besler has been vice-president and general manager of that company since 1903.

J. H. P. Hughart.

J. H. P. HUGHART, who on April 1st, was elected president of the Grand Rapids and Indiana Railway Company, was born in Pittsburgh, on December 1, 1854. He received his education from private schools in Pittsburgh and from the Massachusetts School of Technology, and first entered railway service in the employ of the Pittsburgh and Connellsville Railroad on September 1, 1869 as clerk in the treasurer's office. He also served in the engineering department of this road and in the auditor's office of the Union Line at Pittsburgh.

Mr. Hughart entered the service of the Grand Rapids and Indiana Railway Company, May 1, 1874, as president's clerk, serving in that capacity until December 1st, of the same year. From the latter date until February 28, 1877, he was purchasing agent as well as president's clerk, and from 1877 until 1892, secretary and assistant to the president. From this position he was



J. H. P. Hughart.

elected to that of second vice-president and general manager, which position he held at the time of his recent election to the presidency.

Charles H. Markham.

CHARLES H. MARKHAM, president of the Illinois Central, has recently had the chairmanship of the Board of Directors of the Central of Georgia Railway added to his many heavy responsibilities. Mr. Markham, who was born in 1861 at Clarksville, Tenn., offers a striking example of the reward possible to those in the railway service who perform their duties in an efficient and faithful manner. Mr. Markham began railway work in 1881, as section laborer with the Atchison, Topeka and Santa Fe. From that year until 1887, he was engaged in various positions in station service with the Southern Pacific Company at Deming, N. Mex., and at Lordsburg, N. Mex. From July, 1887, to 1890, he was agent for the same company at Benson, Ariz., and from February, 1890, to March, 1891, agent at Reno, Nev. In March, 1891, he became agent for the Southern Pacific at Fresno, Cal., in charge of freight and passenger business and in 1901, was made general freight and passenger agent of the Oregon Lines at Portland.

September 1, 1901, found him assistant freight traffic manager of the Southern Pacific Company at San Francisco, and on December 1, of the same year, he became vice-president of the Houston and Texas Central Railway. On April 1, 1904, he returned to San Francisco, as general manager of the Southern Pacific Company, and on June 1, 1904, was also made vice-president of this road. He left the railway service on November 1, 1904, to become general manager of the Guffey Petroleum Company at Beaumont, Texas, and during the calendar year 1910, was president of the Gulf Pipe Line Company and the Gulf Refining Company and allied companies at Pittsburgh, Pa. On January 12, 1911, he was elected president of the Illinois Central Railroad and, in addition to this position, which he now holds, he became on February 8, 1911, president of the Ocean Steamship Company of Savannah, and of the Central of Georgia Railway. It was on April 8, 1914, that he was made chairman of the Board of the latter Company.

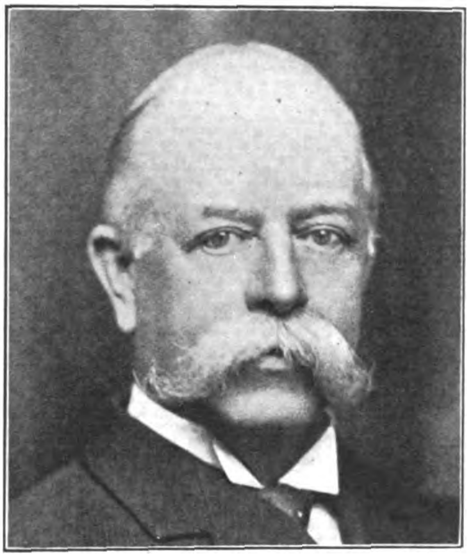
C. H. Markham.

William Alfred Winburn.

WILLIAM ALFRED WINBURN, who has been elected president of the Central of Georgia Railroad Company, was born at Gainesville, Ga., in 1863. He began railway work in 1880, as clerk in the freight office of the Richmond and Danville at Gainesville, and subsequently became clerk in the office of the assistant general freight agent of the same road, which position he held until June, 1883. The

William Alfred Winburn.

following three years were occupied as passenger agent of the Western North Carolina, and in 1886, he again returned to the Richmond and Danville in the same capacity. The following year he was appointed division freight and passenger agent of the same road, and in 1882 became clerk in the general manager's office of the Columbus Southern, now a part of the Seaboard Air Line. From April to June, 1892, he was clerk in the traffic manager's office of the Central Railroad and Banking Company of Georgia, at Savannah, and from the latter date until October, 1901, was general freight agent of the Central of Georgia Railway. On October 1, 1901, he was promoted to the position of traffic manager, and from July, 1902, to 1904, was vice-president and traffic manager of the same road. He was then elected second vice-president, and from October, 1908, to December, 1910, was vice-president in charge of traffic. Since that time he has been vice-president in charge of traffic and operation, which position he held at the time of his recent election as president.



Joseph B. Hutchinson.

JOSEPH B. HUTCHINSON, until April 1st, assistant to the vice-president in charge of real estate, purchases and insurance of the Pennsylvania Railroad with office at Philadelphia, was retired on that date under the pension rules of the Company.

Mr. Hutchinson was born at Bristol, Pa., in 1844, and graduated from the Polytechnic College of Pennsylvania in 1861. He entered the service of the Pennsylvania Railroad in 1863, as rodman and was promoted in 1864 to assistant engineer. The next year he became assistant engineer of maintenance of way and construction, and in 1868, was transferred to the Columbia and Port Deposit as assistant engineer, which position he held until 1869, when he was appointed assistant engineer of the Butler Extension. In 1870, Mr. Hutchinson was promoted to principal assistant engineer of the Columbia and Port Deposit and in 1877, was made assistant superintendent of that road. In 1879, he became superintendent of the Lewistown Division; in 1881, superintendent of the Frederick Division; in 1884, superintendent of the Altoona Division; in 1890, superintendent of the Western Pennsylvania Division and one year later became superintendent of the Maryland Division of the Philadelphia, Wilmington and Baltimore. In 1893, he was appointed general superintendent of transportation of the Pennsylvania Railroad System and four years later was promoted to general manager, remaining in that position until 1903, when he was appointed to the newly created position of assistant to the second vice-president. Mr. Hutchinson's active service with the Pennsylvania Railroad covered a period of nearly fifty-one years.

Guy Hopkins.

GUY HOPKINS, who on April 6th, was elected vice-president of the Morgan's Louisiana and Texas Railroad and Steamship Company, a part of the Southern Pacific System, is a native of New Orleans. After his graduation from Stevens Institute of Technology at Hoboken, N. J., in 1895, with the degree of mechanical engineer, he returned to New Orleans and was appointed draughtsman in the shops of the Southern Pacific, shortly afterwards being promoted to the position of chief draughtsman in the steamship department.

His next position was that of assistant master mechanic, from which he was advanced to that of operating engineer in charge of the assembling, testing and economical loading and operating of the locomotives on the Louisiana Lines. In January, 1912, he was appointed president's representative at New Orleans, holding that position until July 30, 1913, when he was appointed acting general superintendent having jurisdiction over the Louisiana Lines of the Southern Pacific.

John G. Walber.

JOHN G, WALBER, who until recently, has been assistant to the third vice-president of the Baltimore and Ohio System in charge of the Wage Discipline and Employment Bureaus, has been appointed head of the new Bureau of Information of the Eastern Railways with headquarters at New York. The purpose of this Bureau will be to collect, tabulate and keep up to date, rates of pay, rules or service and working conditions generally, affecting railway employes throughout the country, in such classes of service as may be hereafter decided upon.

Data of this character was originally collected in connection with the arbitration proceedings of the engineers', firemen's, conductors' and trainmen's cases by the Conference Committee of Managers, and it is the purpose of the new Bureau to continue such records and to keep authentic information of this character for the use of the members of the Bureau. The centralization of this effort, which has heretofore been exerted by each individual road, will it is believed, produce more reliable results in a more economical manner. No member of the new Bureau commits his company in any way to joint proceedings concerning wages.

Mr. Walber started his railroad career in 1885, as clerk with the Ohio and Mississippi. One year later he secured a clerkship in the office of the president and general manager of the same road,

J. G. WALBER.

and when this line later became part of the Baltimore and Ohio System, he was appointed secretary to the second vice-president and traffic manager, with headquarters at St. Louis.

In March, 1899, he was promoted to the chief clerkship in the office of the vice-president and general manager of the Baltimore and Ohio Southwestern at Cincinnati, and later was advanced to the position of assistant general manager. Mr. Walber was transferred to Baltimore from Cincinnati, becoming general superintendent of transportation and assistant general manager. In 1912, he was appointed assistant to the third vice-president with duties as above noted.

J. L. West.

J. L. WEST has been promoted from the position of general freight agent to that of freight traffic manager of the Missouri, Kansas and Texas, with headquarters at Dallas, Texas. He will also maintain an office in St. Louis. Mr. West's entire railway career has been with the Missouri, Kansas and Texas. He entered the service at Parsons, Kansas, in 1889, and has successively held the positions of stenographer, chief clerk, commercial agent, assistant general freight agent and general freight agent, in the order named. His acquaintance with the patrons of the Missouri, Kansas and Texas is therefore very extensive and he is thoroughly familiar with all the various traffic conditions in the territory traversed by his line.

C. B. Sudborough.

CHARLES B. SUDBOROUGH was born in St. Louis, Mo., November 1, 1876. He entered the service of the Vandalia Railroad Company as Register and Mail Clerk in the Freight Claim Department, September 1, 1897.

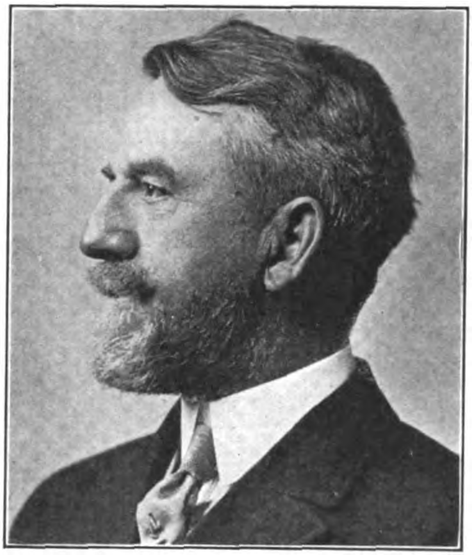
Mr. Sudborough was made freight rate quotation clerk in the office of the general freight agent on February 15, 1899; bill of lading clerk, commercial office, July 1, 1901; freight solicitor, commercial office, February 1, 1904; and chief rate clerk, general freight office, April 1, 1905. He resigned on June 15, 1906, to accept position of traffic manager for a large manufacturing concern located at St. Louis, Mo., but returned to the service of the Company as chief rate clerk, March 1, 1907.

C. B. SUDBOROUGH.

He was appointed division freight agent at St. Louis, Mo., on October 1, 1909, and served in that capacity until March 23, 1914, when he was promoted to assistant general freight agent.

James Russell.

JAMES RUSSELL, who has been appointed assistant to the vice-president of the Denver and Rio Grande Railroad Company, with headquarters at Denver, Colo., was born in 1865. He entered railway service on the Grand Trunk Railway, and was agent and operator for that road from 1879 to 1882; subsequent service, telegraph operator C. St. P. M. & O., Kansas Pacific, and Santa Fe, from 1882 to 1883; Canada Southern and Michigan Central, as telegraph operator and train dispatcher from 1883 to 1887; St. P. M. & M. and Great Northern Railways, train dispatcher, chief dispatcher and superintendent from 1887 to 1903; Missouri Pacific, superintendent from 1903 until 1907; Chicago, Burlington & Quincy Railway, superintendent from 1907 until 1909; Spokane, Portland & Seattle Railway, general superintendent, from 1909 until 1914; Great Northern Railway, general superintendent, from January 1st until February 19th, 1914.



Charles Hansell.

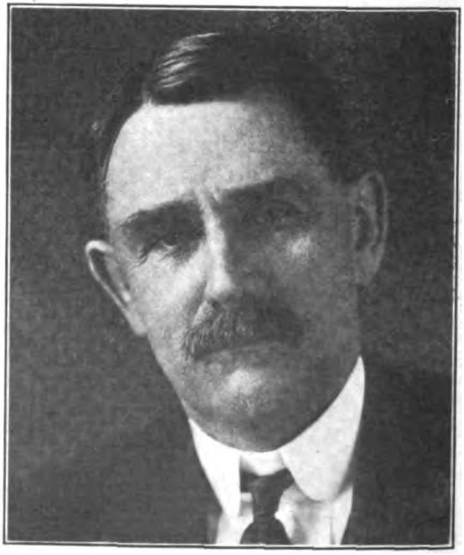
CHARLES HANSELL, in addition to his recently acquired duties as consulting engineer of valuation of the Pennsylvania Railroad, has been made chairman of the valuation committee of the Philadelphia and Reading Railway and the Central Railroad of New Jersey, and also consulting valuation engineer for the direct administration of the work of valuation to be conducted on these several properties.

Mr. Hansell has had a wide and varied experience which splendidly fits him for his new position. For four years he was locating and constructing engineer for the Denver and Rio Grande Railroad, and was division engineer for this Road in charge of the building of its first division into New Mexico. He was chief engineer of the Wabash Railroad at the age of twenty-five and remained in that position from 1844 to 1889, during that time he originated the premium system for inspection of railroads which has since been adopted throughout the United States. He was the first consulting engineer of the Railroad and Warehouse Commission of Illinois, and was sent by that State to Europe to report on railroads. He was also commissioner to Europe for the World's Columbian Exposition.

As vice-president and general manager of the National Switch and Signal Company, he installed important signal work on all trunk lines in America and also installed the first automatic signal system and power interlocking plant in England. In 1909, Governor Fort, of New Jersey, appointed Mr. Hansell commissioner to appraise railroad and canal properties in that State. The Legislature of New Jersey in 1910, decided to have the work of revaluation of railroads and canals conducted by one commissioner, and appointed Charles Hansell. This valuation involved the question of determining the value of the franchise and Mr. Hansell's methods not only won the high approvement of Government officials, but was commended by railway officials as being both fair and scientific. He is a member of the American Society of Civil Engineers, the Engineers' Club of New York and a member and past-president of the Chicago Engineers' Club. He is a fluent writer and a contributor to various technical journals.

Charles A. Morse.

CHARLES A. MORSE, who has been appointed chairman of the Valuation Committee of the Chicago, Rock Island and Pacific Railroad, was born January 1, 1859, at Bangor, Me. He graduated in June, 1879, from the Maine State College of Agriculture and Mechanical Arts (now the University of Maine) and began railway work for the Chicago, Burlington and Quincy in May, 1880. He remained with this road until November, 1881, the last year in the capacity of division engineer in charge of construction. His next position was with the Mexican Central Railway at Juarez, Mexico, and at the time he became associated with this line, they had but one engine and one mile of track. During his period of employment which lasted until March, 1884, connection was made between the North and South ends, 750 miles south of Juarez. In the position of division engineer of construction he was actively engaged in the building of this line. He again entered the service of the Chicago, Burlington and Quincy in May, 1884, as division engineer



CHARLES A. MORSE.

on construction and in January, 1886, began work from the Santa Fe, with which road, with the exception of one year, he remained continuously until April, 1913, occupying consecutively the following positions: Division engineer on construction, resident engineer, principal assistant engineer, assistant chief engineer, acting chief engineer and finally chief engineer of the entire Santa Fe System. From April, 1913, to date, he has been chief engineer of the Rock Island Lines.

D. B. Carson.

D. B. CARSON has been promoted from the position of assistant general manager to that of acting general manager of the Nashville, Chattanooga and St. Louis Railway. Mr. Carson's first railroad experience began with the Louisville and Nashville in 1876, as operator. He stayed with this Company but a short time, leaving it to accept a similar position with the Nashville, Chattanooga and St. Louis. Later he became relief agent and operator for this Road, from which position he was appointed to that of assistant train dispatcher, and in 1881, was made agent at McMinnville, Tenn. In this position, he was not long in demonstrating his ability, and was soon promoted to the position of traveling freight agent, besides being assigned by the management to various work in the different departments, which familiarized him with the operation of the entire system. In 1898, Mr. Carson was made agent at Atlanta, Ga., and on January 1, 1913, was selected for the position of assistant general manager.

D. B. CARSON.

George D. Brooke.

GEORGE D. BROOKE, recently appointed superintendent of the Baltimore and Ohio Railroad at Chillicothe, Ohio, entered the service of this Road in 1892, as rodman in the engineering department, later becoming levelman and transitman, then assistant engineer in May, 1904. He was advanced to the position of assistant division engineer at Pittsburgh on July 1, 1908, and a year later, became division engineer at Baltimore. Mr. Brooke was appointed special agent of the operating department in March, 1911, and February 1, 1912, was promoted to assistant superintendent of the Cumberland Division at Keyser, W. Va. He was promoted to superintendent of the Shenandoah Division with headquarters at Winchester, Va., September 15, 1912, and to his present position April 8, 1914.

GEORGE D. BROOKE.

Maury Middleton.

MAURY MIDDLETON, who has recently been promoted to the position of assistant cashier of the Southern Railway Company, was born in Washington, D. C., in 1880. He entered the service of the Southern Railway in May, 1899, as clerk in the treasurer's office.

MAURY MIDDLETON.

In October, 1908, he was appointed assistant cashier, which position he held at the time of his recent appointment as assistant treasurer and assistant cashier.

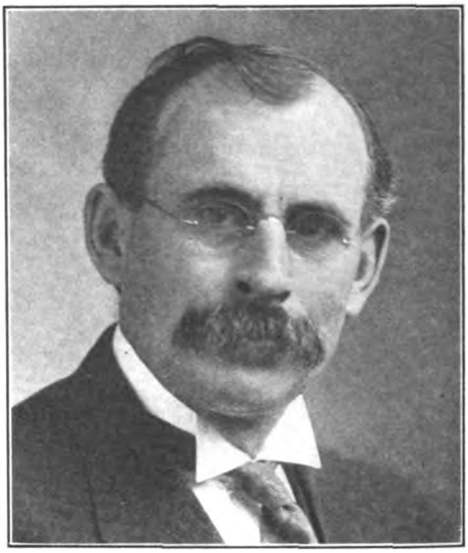
C. R. Craig.

C. R. CRAIG, formerly purchasing agent of the Mobile & Ohio Railroad at Mobile, has been appointed purchasing agent of the Southern Railway Company, to succeed F. S. Wynn, promoted to be secretary. Mr. Craig was born in Richmond, Va., in 1872. He entered the service of the Richmond & Danville in 1889 and remained with it and the Southern Railway in the supply department at Richmond until 1897, when he was made storekeeper at Selma, Ala. In 1898 he was made storekeeper at South Richmond, and in 1903 was detailed to the assistant general manager's office in Washington in charge of material and supplies. In 1905 he was made purchasing agent of the Lenoir Car Works, which position he held until 1909, when he was made purchasing agent of the Mobile & Ohio Railroad.

W. H. Olin.

PROFESSOR W. H. OLIN has been appointed commissioner of agriculture for the Denver and Rio Grande Railroad. This is an entirely new departure for the Rio Grande and marks a new era of agriculture in the territory served by that line.

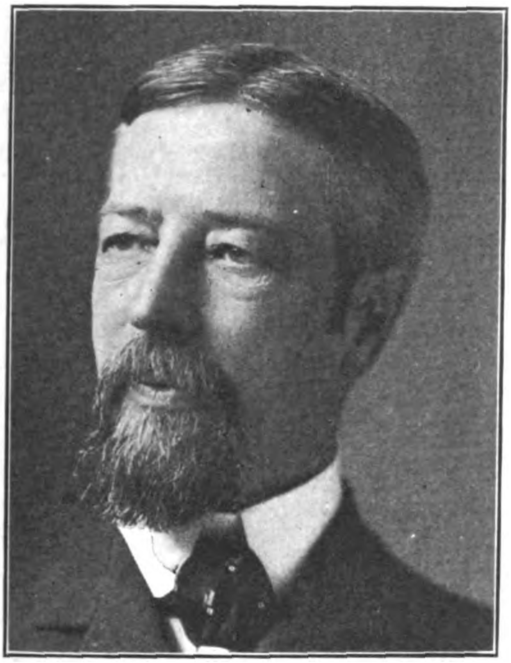
Professor Olin is a practical as well as a scientific farmer. He is a native of California, was raised on a farm in Kansas, and graduated from the State Agricultural College of Kansas, in 1889. He was principal of High Schools and superintendent of city schools at various points in Kansas until 1902. In 1902-4 he was Instructor in Farm Crops at the Iowa State Agricultural College, Ames, Iowa, and there had charge of experimental crop work of Iowa Station. In 1904-7 he was Professor of Agronomy in Colorado Agricultural College, Fort Collins, and in 1907-9 Vice-Dean of Agriculture in the same institution. He had general supervision of the field station crop work of Colorado Station in 1904-9. In 1909-11 he was Industrial Commissioner of the Denver, Laramie & Northwestern Railway. From 1911 to the present time he has been Director of Agricultural Extension Work in the University of Idaho, Boise.



W. H. OLIN.

Obituary

George Frederick Baer, president of the Philadelphia & Reading Railway and the Central Railroad of New Jersey, died at his home in Philadelphia, April 26th. He was born at Lavansville, in Somerset County, Pa., September 26, 1842, and was educated in Franklin and Marshall College. Years before entering that institution, however, he worked as a boy, just in his 'teens, in the printing office of "The Somerset Democrat," of which paper he and his brother afterward became the owners and editors. In 1862 he organized a volunteer company, of which he was made captain, and with it he fought with the Army of the Potomac, at the second battle of Manassas, at Chancellorsville and elsewhere, rising to the rank of adjutant general of brigade. In 1864 he was admitted to the bar and settled at Reading, Pa. In 1870 he prosecuted an action for damages against the Reading Railroad so ably and successfully that he was made counsel for the Philadelphia & Reading. As his law practice increased, he was able to extend the field of his operations, and so successfully did he embrace the opportunities offered to him, that he became an important factor in many industrial and financial enterprises, and especially in coal producing railroad so ably and successfully that he was made confidential adviser of J. Pierpont Morgan. He co-operated with him in the plan to unite under one management all the coal-carrying railroads with terminals in New York City. When the reorganization took place in 1901, Mr. Baer was elected president of the Reading Company, the Philadelphia & Reading Railway Co., the Philadelphia & Reading Coal & Iron Co., and the Central Railroad Co. of New Jersey. When the great anthracite coal strike began on May 12, 1901, he conducted the fight against the United Mine Workers of America. It was a long and desperate fight and a man of weaker and more yielding character would have succumbed under the strain. He remained on duty almost day and night, and, believing himself to be in the right, absolutely refused to yield a single point. Mr. Baer was always a hard worker. He was intensely religious, charitable and almost ascetic in habits. As one of the great captains of industry during a period remarkable for the conflict of big business with the Federal Government, Mr. Baer will live in history. The Philadelphia "Press," in commenting on his notable career, says: "Philadelphia and Pennsylvania have lost a useful and beloved citizen whose



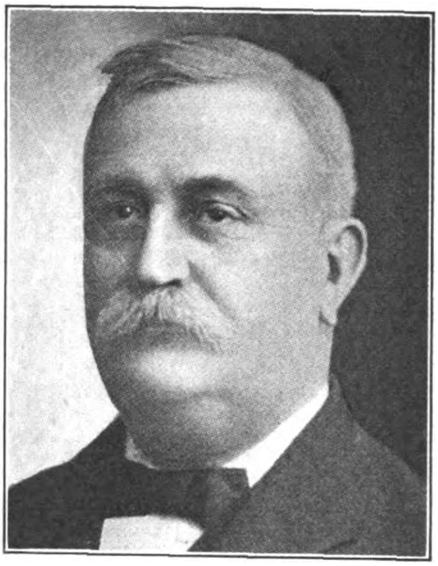
George Frederick Baer.

sincerity of purpose, integrity and honorable conduct have never been questioned by his most vigorous opponents."

Emil Gerber, assistant to the president, and general manager of the erecting department of the American Bridge Co., died at his home in Pittsburgh, Pa., April 16, 1914. Mr. Gerber's death came as a severe shock and personal loss to the large number of friends who admired his sterling worth and felt for him that affection which his personality so readily inspired. The deceased had held, at various times, many responsible positions. He had been connected with and had had charge of a large amount of important work and he made a success of everything he undertook; yet a mere review of his successful life would give an inadequate conception of his place in the engineering profession and in the American Bridge Co. In the course of his career he had a large range of experience and the advantage of intimate association with such men as Ainsworth, Morison, Noble and Ziesing which, combined with his natural ability, gave him breadth of view, soundness of judgment, stability of character and ever-present poise. Mr. Gerber was born at Reichendach, Saxony, Germany, January 31, 1858. He was graduated from the Worcester Polytechnic Institute, Worcester, Mass., class of 1876. After graduation he taught school for one year at Southbridge, Mass. Subsequently he was assistant engineer in the location and construction of the Freemont, Elkhorn & Missouri Valley Railroad. In 1879 he was appointed assistant engineer of the Sioux City & Pacific Railroad, now a part of the Chicago & Northwestern Railway. As resident engineer he had charge of construction of the Blair bridge, Missouri Valley, Iowa, the Sioux City bridge, Sioux City, Iowa, and Jacksonville bridge, at Jacksonville, Fla., which bridges were designed by the late George S. Morison, consulting engineer. In 1889 he was made principal assistant engineer to George S. Morison, resigning in 1897 to accept the position of chief engineer of the Lassig Bridge & Iron Works of Chicago. He was manager of the Lassig plant during the years 1900 and 1901, and was then appointed assistant to the president of the American Bridge Co., at Pittsburgh, also serving as operating manager of the Pittsburgh division of the American Bridge Co., from 1905 to 1911. During the years 1910 and 1911, the construction of the Gary plant of the American Bridge Co. was under his direction. In 1911, in addition to his duties as assistant to the president, Mr. Gerber assumed duties of the general manager of the erecting department. Mr. Gerber has been identified with the construction of many of the largest bridges in the United States. He was a member of the American Society of Civil Engineers, of which he was also a director; of the American Railway Engineering Association; the American Iron & Steel Institute; the Western Society of Engineers; the Engineer's Society of Western Pennsylvania; the Chicago Engineer's Club, the Duquesne Club and the Junta, Pittsburgh. Recently he was appointed on a joint committee of the American Society of Civil Engineers and the American Railway Engineering Association, on railroad tracks and roadbeds. Mr. Gerber is survived by his wife, his daughter, Mrs. Albert Olsen and son, Emil.

Emil Gerber.

Alfred Noble, chief engineer of the Pennsylvania Tunnel & Terminal Railroad, and a former president of the American Society of Civil Engineers, died April 19th, at St. Luke's Hospital, in New York City. Mr. Noble was born in Michigan, August 7, 1844, the son of Charles and Lovine Noble. He served three years in the Army of the Potomac. He was graduated from the University of Michigan in 1870 as a civil



Alfred Noble.

engineer, and for the next twelve years was in charge of improvements in the St. Mary's Falls Canal and St. Mary's River. From 1883 to 1886 he was general assistant engineer of the Northern Pacific Railway, and for some years after that was in charge of the construction of railroad bridges in various parts of the country. Mr Noble was a member of the Nicaraugua Canal Board in 1895, of the United States Board of Engineers on deep waterways in 1899 and 1900, ot the Isthmian Canal Commission from 1899 to 1903, of the Board of Consulting Engineers of the Panama Canal in 1905, and was chief engineer of the East River Division of the Pennsylvania, New York & Long Island Railroad and successor from 1902 to 1907. This company and the Pennsylvania, New Jersey & New York Railroad, in 1907, became the Pennsylvania Tunnel & Terminal Railroad, organized to build the electric division of the Pennsylvania Railroad including the tunnels under the Hudson River. For his work at this time Mr. Noble received the John Fitz medal. In May, 1912, he received the Elliott Cresson medal from Franklin Institute at Philadelphia. He was president of the American Society of Civil Engineers in 1903, and of the Western Society of Engineers in 1897.

William Apps, former master car builder of the Algoma Central & Hudson Bay Railway, died at his home in Toronto, Ont., March 21st, aged 67 years. Previous to his connection with the Algoma Central & Hudson Bay, 1902 to 1903, Mr. Apps had been master car builder of the Canadian Pacific Railway from 1895 to 1902.

Samuel F. Barger, formerly, from 1869 to 1909, a director of the New York Central Lines, died on April 7th at his home in New York at the age of 82. Mr. Barger had been in failing health since his retirement from active business eight years ago. He was born in New York City and studied law at the College of the City of New York. He was admitted to practice in both the States of New York and New Jersey at the age of eighteen years and soon rose to prominence as a corporation lawyer.

Joseph Judson Brooks, general counsel of the Pennsylvania Lines West of Pittsburgh, with office at Pittsburgh, Pa., died suddenly in that city on April 11th. Mr. Brooks was born in 1845 at Salem, Ohio, and graduated from Yale University and Cambridge Law School. In 1881 he became assistant counsel of the Pennsylvania Lines West of Pittsburgh and since 1893 had been general counsel of the same lines.

William G. Bullit, formerly a vice-president of the Norfolk & Western Railway, died in Philadelphia, Pa., March 22nd, aged 58 years.

Warder Cummings, formerly from 1881 to 1886 general superintendent of the Texas & Pacific at Marshall, Texas, and recently terminal agent at Denison, Texas, died at his home in the latter city on April 9th, aged 75 years.

John N. Faithorn, former president and general manager of the Chicago Terminal Transfer Railroad, died at Chicago, March 28th, following a long illness. Mr. Faithorn was born in London, England, March 21, 1852. He was educated in St. Mark's College, London. When a boy he came to the United States with his parents, and when twenty years old took up railroad work, his first position being that of clerk in the offices of the Chicago & Alton Railroad. In 1882 he was made auditor of the Southwestern Railway Association. He was appointed chairman of the Southwestern Railway and Steamship Association in 1890. In 1893 he was made general manager of the Wisconsin & Michigan Railway and five years later he was made president and general manager of the St. Louis, Peoria & Northern Railway. He was vice-president of the Chicago & Alton Railroad from 1902 to 1904 and from August 1, 1899 to 1910, he was president and general manager of the Chicago Terminal Transfer Railroad. He has since been president of the Faithorn Company, printers and manufacturing stationers, in Chicago.

James L. Frazier, civil engineer, formerly connected with the engineering and operating departments of the Chesapeake & Ohio, Southern Pacific, Toledo, St. Louis & Western and other lines, died in Rome, Italy, on February 28th. Mr. Frazier was born at Staunton, Va., in June, 1849, and was educated at Washington and Lee University, and the University of Virginia, graduating from the latter school in civil engineering. He was engaged on the Cincinnati Southern during its entire construction, having charge of the bridges on that line; later he was in charge of bridges on the Louisville, Evansville & St. Louis, now the Southern, and was in Mexico on the lines of the Mexican National Railways. He was at one time a director of the American Society of Civil Engineers. He was division engineer and later chief engineer and general superintendent of the Chesapeake & Ohio at Louisville, Ky., for a number of years. Following this he served as superintendent of several of the divisions of the Southern Pacific. He resigned from the Southern Pacific to become general superintendent of the Toledo, St. Louis & Western, later leaving that company to become general manager of the California Northwestern and the North Shore, at San Francisco. While with the latter company, his health became permanently impaired following a serious illness, and he retired from active work in 1905, since which his time has been spent partly in this country, but principally in Europe. He was a man of strong character and held in high esteem by a large circle of his acquaintances.

J. C. Higgins, superintendent of Atlantic Coast Line Railroad, at Sanford, Fla., died in that city April 3rd, aged 54 years.

William H. Hosmer, chairman of the Western Trunk Line Committee at Chicago, died in that city on April 21st, of pneumonia. He was also chairman of the Illinois Freight Committee, the Gulf Foreign Freight Committee and the Illinois-Indiana Coal Traffic Bureau. He was born in Boston in 1869 and had been continuously in the service of the Western Freight Association, and its successor, the Western Trunk Line Committee, since 1880, having begun as a clerk.

W. J. Hunter, division freight agent of the Grand Trunk Pacific Railway, at Winnipeg, Man., died April 8th, after a short illness.

Thomas H. Johnson, consulting engineer of the Pennsylvania Lines West of Pittsburgh, died at his home in Pittsburgh, Pa., April 16th. Mr. Johnson was born January 12, 1841, in Coshocton, Ohio, the son of William Kerr Johnson and Elizabeth Humrickhouse, and was graduated from Jefferson College, now Washington and Jefferson College, with the degree of Bachelor of Arts, in 1861, the degree of Master of Arts being conferred upon him in 1866. He entered railroad service as a rodman in 1863. From 1864 to 1865, he was assistant engineer of the Pana, Springfield & Northwestern Railroad and served consecutively as engineer in various departments on the Pittsburgh, Cincinnati, Chicago & St. Louis Railway; civil engineer and architect at Columbus, 1873 to 1875; engineer for contractors of the Indiana state house; principal assistant engineer and chief engineer of the Pittsburgh, Cincinnati, Chicago & St. Louis Railway and consulting Engineers, the Engineering Society of Western Pennsylvania. Mr. Johnson was a member of the American Society Civil Engineers, the Engineering Society of Western Pennsylvania, Natural Geography Society, Technischer Verein, Phi Kappa Psi, and other fraternal and scientific organizations.

William Kline, formerly superintendent of telegraph of the Lake Shore & Michigan Southern, at Toledo, Ohio, died in that city on March 19th, at the age of 78. He was born at Albany, N. Y. After leaving school he became a messenger in Buffalo, and later entered the service of the Southern Michigan & Northern Indiana at Adrian, Mich., afterwards becoming chief operator. On the consolidation of the various independent railroads into the Lake Shore & Michigan Southern, Mr. Kline was appointed superintendent of telegraph with headquarters at Toledo. He retired from this position about four years ago.

Joseph Lomax, first president of the Grand Rapids & Indiana Railway, formerly newspaper publisher and lawyer, died recently at the home of his daughter in Indianapolis, Ind. He was 104 years old last December.

William O'Herin, assistant to the general manager of the Missouri, Kansas & Texas System, with headquarters at Dallas, Texas, died at the Mercy Hospital, Chicago, March 31st, aged 69 years. He has been connected with the Missouri, Kansas & Texas for forty years, beginning as a locomotive fireman. He was later locomotive engineer and subsequently became master mechanic. He was promoted to superintendent of machinery and equipment in 1897, which position he held until January 1, 1913, when he was made assistant to the general manager.

Arnold D. Perry, former general agent of the Chicago & Alton Railroad, at Peoria, Ill., died recently in Bloomington, Ill., aged 61 years.

C. G. Phillips, president of the Cropley-Phillips Company, of Chicago, and secretary of the Association of American Railway Accounting Officers since the organization of that association in 1887, died at his home in Evanston, Ill., April 17th.

Daniel P. Sheehan, roadmaster of the Metropolitan West Side Elevated Railway, Chicago, died in that city April 27th. He was crushed by a derrick on which he was sitting, when he leaned over to warn a track laborer who was in a dangerous spot. Mr. Sheenan did not note his own danger and was fatally injured.

John R. Skinner, superintendent of stores of the Delaware & Hudson Company at Oneonta, N. Y., died suddenly on April 6th, at his home in that city.

Charles F. Smith, division superintendent of the Oregon Short Line Railroad, at Pocatello, Idaho, died at the home of his parents in Niagara Falls, N. Y., March 30th. He had been granted a leave of absence by the Oregon Short Line last November, due to ill health.

Cy Warman, the popular writer of railroad stories, died in Chicago, April 7th, aged 59 years. His early experiences as an engine wiper, fireman and locomotive engineer were later turned to good account. He saw the interest and romance of railroading. Though his material was rejected at first, stories of the road began to appear at length and proved immensely popular. His most successful work was "Tales of an Engineer."

Edward White, formerly from 1885 to 1898, treasurer of the Erie, with office at New York, died at his home in Brooklyn, on April 12th, at the age of 70.

Aaron J. Zabriskie, a civil engineer and railway builder, died on April 15th, at his home in Jersey City, N. J., at the age of 60. He was graduated from the Polytechnic Institute at Albany, N. Y., in 1876, and was later engaged in the construction of the Ninth Avenue elevated line in New York City, which was the first elevated road built in that city, and afterwards was engaged in construction work on the Erie Railroad.

Closing Arguments in the Advance Rate Case

THE final arguments in the advance rate case were heard by the Interstate Commerce Commission during the last week of April. Comprehensive briefs were filed by the carriers. In a compilation dealing with returns for the first eight months of the current fiscal year, there is shown a decrease in revenues of $21,161,824. The statement, covering the result for this period, was in part as follows:

> During the period from July 1, 1913, to February 28, 1914, the revenues of these companies decreased from $931,508,361 to $910,346,537 as compared with the previous year. For the same period expenses increased from $645,404,193 to $683,364,514. There was thus a decrease in revenues of $21,161,824 and an increase in expenses amounting to $37,960,321, or a loss in net operating income of $59,122,145. When to the foregoing fact is added an increase in taxes of $2,507,471 and a decrease in net revenue from outside operations, there is shown a loss in operating income of $69,355,881, or 26%.
>
> Assuming that no additional money has been invested in these properties since July 1 of last year, the returns for the current eight months show 4.47% earned on property investment, as against 5.53% in the corresponding eight months of last year. The Pennsylvania System in the same period shows 4.92%, as against 5.56% in 1913. The New York Central Lines show 3.56%, as against 5.63% in 1913. The Baltimore and Ohio System shows 4.10%, as against 4.63% in 1913. The Erie System shows 2.75%, as against 3.91% in 1913. The Pennsylvania Railroad System, Baltimore and Ohio System and New York Central Lines show 4.23%, as against 5.44% in 1913.
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> The rate of return on property investment that is shown by all these railroads for this portion of the present year is the smallest of any year in the last fifteen years.

A brief summarizing the position of the roads devoted considerable attention to the purely economic features of the case. It set forth that the purchasing power of money has so decreased in the past eighteen years "that the purchasing power of the moneys now paid for freight on the railroads of the country generally was in 1912 approximately 30 per cent less in the market for commodities than it was in 1896." The brief sets out that:

> The railroads are still required to sell their services at rates to pay even less than those established years ago, after competition had forced them to a low level, and to take their pay in a depreciated currency, while they must pay their labor, buy their materials, borrow their capital and pay their taxes on the basis of present-day commodity prices.
>
> We have shown a steady decline in the return on the money which has gone into the transportation plant, i. e., the road and equipment. We have shown (a) that in the period 1903 to 1913 the net operating income per cent (of the thirty-five roads embraced in this proceeding) on the money which went into the property investment account was an amount equal to 4.31% in 1913 over 1910. The rate of return on property investment was 5.85% in 1903, 6.28% in 1910 and 5.36% in 1913.
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> Comparing 1913 with 1910, the combined property investment increased $659,862,588, while operating revenue increased $186,775,867. Including taxes, which increased over $11,579,165, expenses increased more than $201,301,462, so that net operating income decreased $16,311,000, or nearly 5%. In other words, after increasing investments 11.74% and gross revenues 15.09%, there was no resultant increase in net operating income; on the contrary, there was realized $16,311,321 less net than was earned before the $659,862,588 was added to the property investment.
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> There has been a steady and constant increase in transportation, maintenance of way and maintenance of equipment expenses, an increase not temporary, but of a continuing character due to the nature of the underlying causes, such as the increase in wages, legislative requirements and the necessity of maintaining a higher standard of track and equipment. The operating revenues of the carriers are inadequate to keep pace with this increase in expenses, and, accordingly, the money expended in procuring necessary facilities has earned an utterly inadequate return since 1903, and no return at all since 1910.
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> The effect of these things is that at a time when the business of these carriers is larger in volume than ever before in their history, at a time when their capital obligations are the largest ever recorded and their plant and equipment more complete and more efficient than ever before, they find themselves face to face with a declining net income. They are, moreover, now without the potentiality of further operating economies, such as they have been able thus far to put into effect, and which have, until but recently, held in check in the forces beyond their control, and these are now operating in full strength to diminish profits. The situation disclosed in the figures for 1913 which are before the Commission is serious, but a truer reflection of the actual facts is found in the figures so far available for 1914, for it is only now that the full effect of the factors operating to diminish the carriers' profits is beginning to appear.
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> It is generally conceded that within the next few years, if our means for transportation by rail are to keep pace with the calls upon them, very large sums must be expended in the way of new construction and new equipment. While some small portion of this may come from current earnings, the great bulk must be new capital and this capital must be obtained from the investing public. If, therefore, we are to rely in the future, as we have in the past, upon private enterprise and private capital for our railway transportation, the return must be such as will induce the investment. It is therefore not only a matter of justice, but in the truest public interest, that an adequate return should be allowed upon railway capital.
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> Unless the railroads are permitted to increase their revenues by a reasonable increase in their rates for transportation services so as to help meet the large and permanent increase in the cost of capital, wages, taxes and other expenses, then it will be only a question of time when there will result not merely the reduction or suspension of dividends, but also in some cases at least a default in the payment of interest and other obligations. Unless the railroads are able to receive rates for their transportation services that will produce net revenues sufficient to meet reasonable dividend requirements and leave a reasonable surplus as a margin of safety to help defray the "cost of progress," secure the future stability of rates, establish confidence in the continuance of dividends and otherwise maintain credit, there is but little ground to believe that private investors will afford the necessary new capital.
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> Diminished surplus earnings prevent the creation of adequate reserve funds unless dividends be curtailed or suspended. Curtailments of dividends would aggravate the situation, while suspension of dividends would make it increasingly difficult to obtain any capital even by the sale of bonds, and where obtainable by bonds sales it would only be at much higher rates of interest. Total suspensions of dividends by all the railroads, though it would produce a great panic, would not produce the amount of new capital required.

In opening the argument for increased freight rates George Stuart Patterson, General Solicitor of the Pennsylvania Railroad, addressed the Commission on "The Need of the Carriers for Additional Revenue," and in part said:

> "During the past ten years, for the thirty-five railroad systems in this proceeding—
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> "Property investment has increased 46.04%;
> "Capital obligations have increased 49.22%;
> "Operating revenues have increased 63.54%;
> "Operating expenses have increased 74.80%; and
> "Taxes have increased 111.43%.
>
> "During this same period—1903-1913—there has been—
>
> "(*a*) A decline in the ratio of net operating income to property investment;
>
> "(*b*) A decline in the ratio of net operating income (plus interest on funded debt) to total capital obligations;
>
> "(*c*) A decline in the ratio of surplus to total capital obligations.

"All of this shows a decided weakening in the position of the carriers as regards their return on investment, despite the growth in the size of the plant, volume and density of the business, and the facilities and improved methods of handling that business.

"Thus during the last ten years the carriers find themselves, after a period of great growth and expenditure of new capital, worse off than they were before this growth and expenditure, though they should be materially better off.

"The importance of this showing for the period 1903 to 1913 is greatly increased by the fact that the tendencies which operated during that period to decrease the return on the investment are operating with even greater force in the last three years.

"The figures reflect an acceleration in the rate of decline in recent years. They show the lowest rate of return, and the lowest surplus in the last three years, and the year 1913 shows the lowest figure for any of these years. If it be remembered that these three years are the biggest three-year period in the carrier's history, and that 1913 was in itself the largest of the three, then the full significance of the showing becomes apparent.

"The view has been suggested that the net revenues for 1913 were larger than for any of the last five years, except 1910, and, therefore, negative any inference that the carriers' revenues are inadequate or that they have reached a crisis in their affairs. In 1913 not only were the facilities the largest in the history of these carriers, but the use of them was the greatest, and practically to their full capacity. When a comparison of 1913 with 1910 shows that, despite the expenditure of over $659,0000,000 on property and an increased use yielding $186,775,000 increased operating revenues, the net operating income decreased $16,311,000; then, that comparison, the carriers urge, does prove the inadequacy of their revenues and that the results so shown are not such as to fairly justify the expenditure of additional capital for the further provision of similar facilities.

"It is an absolutely new thing in the history of American railroading for a year like 1913, or a period like 1910-1913, when traffic was the largest ever recorded for a similar period of time, to show the position of the owners of the property to be worse off than any previous years or periods. It is strong and conclusive evidence that some change has taken place in conditions, nor is it difficult to see what this change is, and what has brought it about. It will be disclosed by the collateral lines of inquiry, namely increased cost of operation and increased cost and difficulty of securing new capital. There has been a steady increase in transportation, maintenance of way and maintenance of equipment expenses, which are continuing in character, and the full effect of which is just beginning to be felt."

O. E. Butterfield, General Solicitor of the New York Central Railroad, also argued on the needs of the railroads. He declared that the railroads have experienced constantly increasing difficulty in recent years in securing necessary new capital, and where they are able to make the new securities for that purpose they are unable to do so except at substantially lower prices or upon substantially higher basis. He also stated that—

"If the railroads are not allowed to charge such rates for their services as will produce a proper return on the money invested, then how long will those responsible for the management of these properties be justified in continuing large expenditures of new capital for additional facilities and equipment, even if such capital were available at reasonable rates of interest? Have they not a duty to perform to their shareholders and to those whom they have induced to purchase their securities which must be considered as well as their desire to furnish better and additional transportation facilities for the use of the public?"

J. L. Minnis, General Counsel for the Wabash Railroad, presented a special argument in reference to the meaning and purpose of our national laws regulating railroads, in which he said:

The question presented here is not the ordinary question involved in an attack upon the reasonableness or unreasonableness of a rate—it is a question of giving effect to a great public policy. The concrete question to be decided is whether present rates have produced and are now producing sufficient revenue to the companies to justify the belief that much needed new capital may be obtained from private investors on reasonable terms. The only object of investing money is personal gain. Private capital is timid and often influenced by misapprehensions and unfounded suspicions. Investors' owe no duty on the premises, and do not act by compulsion, but invest voluntarily if at all.

Many misapprehensions with respect to the purposes of the Act to Regulate Commerce have been hurtful to railroad credit. By some it has been assumed that a share of the managements of the railroads has been vested in the Commission, when in fact, notwithstanding that the many public abuses which provoked the enactment of the law were due to private management, the law left the management with the investors represented by the companies. Others have assumed that the power vested in the Commission was designed to prevent the companies from earning a return on watered securities, when in fact, notwithstanding the rank abuses attending the financing of the companies by private investors—although likely not more scandalous than attended the transactions of the Government and the States in aiding the construction of the early railroads—Congress has not, directly or indirectly, exercised any authority on that subject; in fact, the legislation now pending in Congress on that subject is designed to safeguard future investments in the railroads.

The absence of an enactment in regard to abuses in connection with issuing securities, and the pendency of the present legislation, recognizes that Congress has in the past deemed it wise to allow a wide range of discretion in issuing railroad securities, with a view to encouraging private investments in railroads; and that it does not now regard it wise to further unsettle railroad credit by casting a cloud on the value of investments made in good faith in securities for which present value may not have been received. The harmfulness of the assumption that those securities are to be destroyed is obvious when we reflect that the supposition is that they are to be destroyed by the Government. It would be a slander on the Government to say that, while it preserves its own obligations as sacred, it has conferred power on this Commission, one of its instrumentalities, to destroy a large class of investments which our citizens have made in good faith.

* * * *

If the policy of the Government be executed, allowance must be made in the rates to cover the natural timidity of private capital, and if capital is to be acquired by the companies at reasonable interest, their rates must be high enough to foreclose questions as to the security of railroad investments. It will not reassure the investor to say that the companies might be more profitably managed. That would frighten them away, and if it may ever be truthfully said that the managements of the companies are incompetent and wasteful, it will mean that the policy of the Government has failed. So the question is not one merely of theories with respect to maintenance or efficiency or accounting, but it is a broad, practical, common sense question which must be dealt with on broad lines.

George F. Brownell, Vice-President of the Erie Railroad, speaking on the economic justification for an increase in freight rates, said:

If operating expenses and the new burdens imposed by law upon the railroads had not been enormously increased, they would now be in a highly prosperous condition, but it is the net income and not the gross that counts, and the adequacy of the net must be considered in connection with the amount of capital employed in the work and the aggregate amount of transportation service performed. The railroad industry is the nation's greatest industry, save only that of agriculture. In it is invested more than a tenth of the nation's wealth, and it gives direct employment, under normal conditions, to nearly two millions of the country's most intelligent and efficient workers, and indirectly to many more.

Until recent years it was, like other industries, responsive to the law of increasing returns, under which an increase in the volume of traffic would produce a decrease in the unit of cost, and operating revenues would increase more rapidly than would operating expenses. In those early years, like other industries, it was able to control its expenditures and increase its charges to meet changed conditions. All this has changed. It has lost in large measure its ability to control its expenditures. Because of its quasi public

> character it is subject to Governmental regulations and control to much greater extent than most other industries. It has been subjected to numerous requirements of legislatures and regulatory bodies, both Federal and State, which have increased greatly its operating and its capital expenditures. Many additional legislative requirements of this character are in various stages of incubation.
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> The railroads are not here questioning the wisdom or expediency of these requirements, and will continue to the best of their ability to bear and sustain the financial burdens they impose; but they ask that they be not deprived of strength to accomplish the task—and remunerative rates are the very sinews of that strength. The railroad industry has ceased responding to that economic law; it has been forced to become an industry of decreasing returns. The increase in expenses and other burdens has also absorbed the savings from increased efficiency and from the investment of new capital. It is fast reducing net operating income to a point less than in previous years, when the business handled and the investment of capital were much less; and the prospect is that, upon the basis of existing freight rates, the rate of net return will continue to diminish, notwithstanding any further increase in the volume of business handled and in property investment.

Frank A. Lyon, speaking for the coal interests of the Pittsburgh and Hocking Valley districts, maintained that the railroads were the only great industry that did not conform to the principle of reduction of cost of service with the increase of business and modern means of handling its business. He said: "If this Commission does not stand as a bulwark to the consumer, the public will stand where it has always stood, at the mercy of the carrier, with the rates 'all that the traffic will bear.'"

Louis D. Brandeis, counsel for the Interstate Commerce Commission, filed a brief in opposition to the increase. He maintains that by conserving their revenues properly derivable under existing rates, the railways would be confronted with no necessity for an advance. It has been shown, he said, that the aggregate freight revenues of Eastern cariers in 1913 were $1,000,000,000, and that the five per cent advance would increase the revenues about $50,000,000 a year. In his brief Mr. Brandeis said:

> "It is true that railroad taxes have increased largely in recent years; but the increase has been general in all business, and the ratio of railroad taxes to gross revenues is still small. Railroads have, in common with other businesses, been necessarily affected by the increasing rates of interest generally prevailing in recent years. But it must be remembered that interest rates fall as well as rise, and we appear to have entered a period of declining rates."

Mr. Brandeis suggested that many railroads had strained their credit by "undue expansion" instancing the New Haven, Boston & Maine, Frisco Lines, Rock Island and Pere Marquette. He argued that the increase in the several elements of cost of operation of railroads did not account fully for the inability of the companies to earn adequate profits at existing rates; and that the general scale of wages on railroads had not increased more than in other businesses.

He contended that, while the railroads have shown greater efficiency in recent years in equipment and roadway, in accounting they are weak, as compared with manufacturers, and "do not know the cost of any of the services which they furnish." Of the five per cent advance, Mr. Brandeis said:

> It would intensify existing injustice and discrimination in rates. It would give additional revenues where relief is not needed and would fail to give adequate revenues to carriers who are most in need of relief. The investigations already make it clear that, by conservation, net revenues may be largely and speedily increased and that the sources available would yield revenues far in excess of the $50,000,000 which it was proposed to raise by tariffs filed.

In testifying before the Commission, Mr. Brandeis, while admitting that "the carriers need additional revenue in order properly to perform their own duties and promote the prosperity of the country," maintained that "the proposition to increase freight rates by horizontal increases is an unsound expedient." Steps, he said, should be taken, as soon as possible, to increase the carriers' revenues, and he suggested that testimony given at the Commission's hearings had shown how that might be done without advancing rates. He referred to the elimination of special allowances to shippers, free car spotting and other free services now performed by the roads. In stating that the horizontal increase sought was an unsound expedient, Mr. Brandeis said:

> No power is given to determine the property of a system of rates considered as a whole. Under the law the Commission must in effect deal with each rate separately and the carriers must justify each rate separately. Except as to the Central Freight Association scale, the railroads as shown above have presented no evidence whatever to justify any of the proposed increase of rates.

In concluding his arguments, Mr. Brandeis summarized his conclusions as follows:

> On the whole, the net income and net operating revenues of the railroads in official classification territory are smaller than is consistent with their assured prosperity and the welfare of the community, and this is notably true of the Central Freight Association and other lines. In view of this fact, it is desirable that steps should be taken as promptly as reasonably may be to increase this net revenue. That the method proposed by the carriers for increasing this net revenue is essentially unsound; that it is, except as to a small part of the tariffs which have been submitted, contrary to law, and would be, if approved, invalid and exceeding the powers vested by the Congress in this Commission; and, as to the small part to which it would be legal to approve them, it would be unwise to the carriers and to the community to approve them. That there is nothing in the conditions of the carriers which should prevent the adoption of those methods of increasing their revenue which are conformable and in accordance with their interests and those of the community, and that there exists, and have been indicated in this record, a definite means of increasing the revenues without resort to these unsound, largely illegal, and horizontal increases in rates.

Clifford Thorne, representing the Western Railroad Commissions, also filed a brief in opposition to the increase, and in part he said:

> The carriers have claimed an inability to properly take care of their properties because of lack of funds during recent years. The undisputed evidence in this case shows that they have, in fact, been able to expend larger sums for maintenance and improving their properties during the past four years than during any other four-year period in their history; and their expenditures of that character last year were $60,000,000 greater than ever before in their entire history. Tne carriers have claimed that interest charges have increased to such an extent that, with the increased cost of labor and supplies, they do not have an adequate surplus for the payment of dividends and for a margin of safety; that their net corporate income has not increased at the same rate as their capitalization. Their own exhibits show that the 35 systems, as a whole, in the Eastern district, had a greater net corporate income above all taxes and interest during the last five years than during the preceding five years. Further, that the per cent of net corporate income to outstanding capital stock was greater during the last five years than the preceding five years, and was greater in 1913 than the average for either one of the said five-year periods. The carriers claim that the present net profit or net corporate income, even at its high level, is not adequate. This Commission unanimously held in 1910

> that, in order to have sufficient revenue, a company should be able to pay its operating expenses and fixed charges, including interest, taxes, &c., and have a sum left over equivalent to 7½% on its common stock. The carrier's own exhibits in this case show that last year the railroads as a whole, in the Eastern district, had sufficient to meet all these expenditures and pay their operating expenses, fixed charges, taxes and interest, and had left over a sum equivalent to 8.07% on their entire capital stock outstanding, including both common and preferred.

Briefs in opposition to an advance in rates were likewise filed on behalf of the Pittsburgh Coal Company, the New Pittsburgh Coal Company, and some of the State Railroad Commissioners in the Eastern Classification Territory.

"Spotting" tariffs, which the railroads in Eastern territory filed to become effective May 1st and subsequent dates were suspended on April 29th, by the Interstate Commerce Commission until July 30th. These tariffs were filed by the roads to meet the assertion made in the advance rate case that charges should be assessed on services now performed free for shippers at terminals. An inquiry is now in progress to determine whether the allowances made by the trunk lines, as divisions of their rates, do not constitute, in a legal sense, rebates on shipments handled by the industrial roads.

A resolution, introduced by Senator La Follette on April 27th, requesting the Interstate Commerce Commission to transmit to the Senate all communications "manifestly designed" to influence the action of the Commission in its decision in the freight-rates advance case, was adopted by the Senate on the 28th; we print the resolution below:

> *Resolved*, That the Inter-State Commerce Commission be, and it is hereby, requested to transmit to the Senate of the United States all anonymous letters and communications and all written or printed letters and communications received with signatures thereto, and all circulars, clippings, newspaper or magazine articles, marked or otherwise, received by said Commission or any member thereof which were manifestly designed to influence the action of said Commission in making or refraining from making any ruling, conclusion, finding, recommendation, report, or order in the determination of the case known as Docket No. 5,860, entitled Revenues of Rail Carriers in Official Classification Territory, and in the case known as Investigation and Suspension Docket No. 333, entitled Rate Increases in Official Classification Territory, now pending before said Commission, excepting such letters, communications, briefs, records, and other matters as have been received by said Commission or any member thereof, under the rules and regulations of the Commission governing its proceedings in the orderly administration of the Inter-State Commerce Law and Acts amendatory thereof, from the officials, employees, and attorneys of the railroads parties to such proceedings, the attorneys, investigators, and employees of the Commission engaged in investigating and preparing said cases, and from the shippers and associates of shippers, individuals and attorneys who appear in the proceedings as protestants.

In the House on the 24th, a motion to table a resolution of Representative Levy calling upon President Wilson to report certain facts within the knowledge of the Commission on the freight rate matter was agreed to. The following is the Levy resolution:

> *Resolved*, That the President of the United States be, and he is hereby requested to report to the House of Representatives for its information, all the facts within the knowledge of the Inter-State Commerce Commission which show, or tend to show, that said Commission has in many cases failed to grant an increase in freight rates to the railroads where no objections to such increase have been filed, and where the shippers in many instances have requested that such increase be granted on the ground that it was just and reasonable.

What is at Stake in the Eastern Rate Case

SLASON THOMPSON, director of the Bureau of Railway News and Statistics, has issued his annual statement covering steam railway operations in the United States during the year ending June 30, 1913. It is a remarkable document covering the entire range of railway activities, and contains the latest statistics on mileage, equipment, number and compensation of employes, capitalization, cost of construction, ownership, freight and passenger traffic, earnings and expenses, taxes damages and injuries, locomotive fuel, accidents, railway receiverships, foreign railways, growth of railways at home and abroad and cost of railway regulation. Perhaps, however, the part of the report, which, at the present time will prove of greatest interest to railway officials is that which deals with the restrictive effect of regulation.

Mr. Thompson points out that when taxes are deducted from the net revenue for the calendar year 1913, the balance is found to be $41,000,000 below the net operating income for 1912. When reduced to a per mile basis, it appears that the figures for 1913 are below those for any other year since 1907 inclusive, except 1908. The true significance of these per mile figures can only be understood when it is remembered that the mile of line in 1913 represents a net investment of at lease $6,000 more than in 1907. That means that each mile has to earn at least $250, more to meet the increased interest charge, which is a point persistently ignored by the Anti-Railway School of Economics. Furthermore, the net results of railway operations for more recent months are so much more unfavorable than those presented by Mr. Thompson for the calendar year, that it is little to be wondered at that the railway situation of to-day is considered by those who are able to fully comprehend it, as little short of desperate.

In discussing the attitude of the Interstate Commerce Commission towards the railways with special reference to the advance rate case, Mr. Thompson has the following to say:

"Three years have elapsed since Chairman Prouty and Commissioner Lane rendered their decisions denying the application of the eastern and western railways for advances in freight rates, and all the fears of the railways have been more than realized. The fitful promise of better times that deceived the Commission, then, settled into a three years' struggle to make unremunerative rates meet the advancing cost of living, the advancing demands of labor for higher wages, the legislative prescription of full crews and shorter hours, and the public clamor for more expensive service. The story is an old one now. Successive arbitrations have forced on the railways higher wage scales while the arbitrators have been powerless to adjust the income of the railways to pay the increased scale. This adjustment was passed on to the Interstate Commerce Commission. Many railway employes were given a minimum scale nearly equal to their average pay but to this day no minimum rate has been fixed or found below which the average receipts of railways may not be forced. There is no apparent minimum to protect them from confiscation or receiverships.

"For three years the needs and necessities of the railways have been common knowledge. To every boast of a high tide in earnings there has been a constant undertow of increased expenses for everything entering into railway operation. Only once since 1907 has the ratio of expenses to earnings been below 70 per cent, which, except as affected by the money market, is the dead line for the railways of the United States as a system. For the six fiscal years since 1907 this tell-tale has ranged 73.20; 69.86; 70.06; 72.54; 73.54; and 73.55. The high mark for 1908 was due to a drop of nearly $200,000,000 in revenues and the low record of 1909 marked the drastic retrenchments in deferred expenditures, which the railways have not yet overtaken.

"For the calendar year 1913 this ratio was 75.58 per cent, and for the month of January, 1914, it was 82.2 per cent, in which month, for the railways of the eastern district a petty five per cent advance in rates, it was 87.6 per cent.

"Verily it is a condition and not a theory upon which every other industry in the country waits. Prosperity strains at the leash which the Commission holds in its all-powerful hands, hesitating to unloose its hold.

"Now why does the Commission hesitate and procrastinate? Why does it summon Mr. Louis D. Brandeis to its council? Why permit Mr. Clifford Thorne to unload tomes of irrelevant statistics upon its tables? Why invite shippers to file selfish protests against the performance of an obvious duty, the benefits of which would accrue to them as well as the whole country?

"These questions are difficult to answer. The employment of Mr. Brandeis is explicable. His national fame rests on his exploded statement that by the practice of efficiency, which came trippingly from his tongue, the railways could save a million dollars a day. By turning to the center pages of this pamphlet the reader will perceive that this stroke of efficiency legerdemain would wipe out every cent of the expenditures for maintenance of equipment in 1909! In no other division of railway operations is the Brandeis brand of efficiency applicable. It has to be applied to men in the mass and not individually.

"Then why has Mr. Brandeis, who had been retained by interests hostile to the railways in the former hearing, retained by the Commission in this? In times past a lawyer with a keen sense of professional propriety would not have accepted such a retainer. But we live in progressive times. Mr. Brandeis has apparently tried to justify his retainer by propounding a series of 78 questions which have cost the railways thousands of dollars to answer, and which are not pertinent to this investigation when answered. The compilation and analysis of the answers alone would delay a decision six months. He represents the spirit of prosecution which should have no place in such a hearing. Through his retainer the inquiry assumed the appearance of a search for an excuse to deny the advance rather than an open-minded inquiry into the necessity for granting it.

"But the injection of Mr. Clifford Thorne into this hearing is wholly inexplicable. Mr. Thorne was elected a railroad commissioner of Iowa while holding briefs hostile to the railroads. Even in the present hearing, while he poses in the public prints as the Railroad Commissioner from Iowa, he is registered in the 'Traffic World' as 'representing the American Live Stock Association' and leading the general attack on any advance. Aside from this seeming impropriety, Mr. Thorne's value as an expositor of railway finances rests upon his undervaluation of American railways roughly valued by Mr. Prouty at $20,000,000,000 by six billions of dollars, his estimate that the United States could purchase them for $14,000,000,000 in three per cent bonds, and his error of $211,306,540 in stating what the government could save annually by taking over the railways.

"In addition to representing several state railroad commissions and the Live Stock Association, Mr. Thorne claimed to represent the shippers and consumers of the West. For twenty years so-called representatives of the shippers, masquerading as consumers, have been camping in the vicinity of the Interstate Commerce Commission proclaiming their hardships under the lowest freight rates on earth. During those twenty years the average freight receipts of the railways have been hammered down from 8.78 mills to 7.27 mills per ton mile. And during that time the enormous sum of $4,211,341,820 has been remitted in freight charges to the shippers, not one red copper of which has reached the consumers. Every cent of this vast sum has stuck in the pockets of the shippers, who, through their consignees, have meantime increased the price of all commodities 33 per cent to the consumers. These are no fancy figures selected to make a point. The reader can verify them in the reports of the Commission and the Bulletins of the Bureau of Labor, or he can find them in their proper place in this report.

"Is it not time the Commission closed its ears to the representatives of associations that have exacted such tribute from both carriers and consumers?

"It is to be hoped that the Commission will not seek to postpone a definite settlement of this question by prescribing such palliatives as a shift in terminal charges or the recommendation of some nebulous system of efficiency for the most efficiently operated railways in the world. It might help, however, by recommending that the government pay at least the cost of transporting the mails, including postal packages which are now carried at an annual loss of from $25,000,000 to $30,000,000.

"In regard to the maintenance accounts, about which there has been some criticism, the briefest analysis discloses that the high ratios for 1913 were necessary to make up the replacements deferred from the lean years 1908 and 1909. What will be the effect of Chairman Harlan's suggestion that maintenance accounts should include a minimum charge of three per cent for depreciation is an open question. The returns for 1913 indicate that four per cent would be nearer the actual depreciation. The average life of all equipment is approximately 25 years and during the last years of that life much of its time is spent in repair shops. Had the depreciaton charge of three per cent been obligatory in 1913 the cost of maintenance of equipment for that year would have been at least $50,000,000 more than it was.

What Is at Stake in the Eastern Rate Case?

"It is not an advance of five per cent in the rates for Eastern railways alone that is involved in the present hearing, but the Commission's conception of its duty and attitude toward the carrying industry of the United States. Is regulation to mean nothing more than inquisition, restriction and rate reductions, or corrective, constructive and progressive state guardianship of the great transportation industry? The grant of the full advance in itself would amount to a mere drop in the sea of advancing costs that surges about the railways. But its moral effect would spread to the remotest shores of American industrial life.

"Clearly this is a queston not to be settled while listening to the conflicting testimony of interested witnesses in Washington under the harrying of keen-witted lawyers, but behind closed doors in the private sessions of the Commission. It involves the most difficult decision patriotic men are occasionally called on to make —the decision to reverse themselves, to retrace a long line of precedents all leading further and further away from the principle laid down by the Commission's first Chairman that 'the act to regulate commerce was not passed to injure any interests, but to conserve and protect. It had for its object to regulate a vast business according to the requirements of justice.'

"But such a change of policy comes not about through taking counsel with experts and lawyers but 'by fasting and prayer.' In this case the railways are doing the fasting and American industries are doing the praying. Unless the relief is given broadly, ungrudgingly and through motives of the highest state policy, an advance of five per cent will not save the situation.

"Out of the present situation has come the timely declaration of President Samuel Rea, of the Pennsylvania Railroad that the railways will abandon their laisser faire attitude when attacked and will use every legitimate means in the assertion of their rights. 'Your management,' said President Rea, addressing the 89,000 stockholders of the Pennsylvania, 'is determined that, within the limits of reason, it will hereafter allow no statement to go unchallenged that reflects on the management or the integrity of its officers.' It is to be hoped that Mr. Rea's example will put heart into other representatives of the railways that they may stand up in any presence and with clean hands and level eyes demand just treatment because they render efficient service for equal and reasonable compensation.

Rate Reductions During 1913.

"While the chief attention of students of the railway problem has been fixed on the application for an advance in rates on eastern roads the wheels of regulation have been grinding out their annual tale of rate reductions. The net result of these reductions as set forth in subsequent pages of this report is summed up in the figures 7.27 mills as the average receipts per ton mile in 1913 against 7.43 mills in 1912 and 7.57 mills in 1911. The hand the respective Commissioners have had in bringing this about is shown in the following distribution of their opinions into dismissals of complaints and reductions or reparations:

Opinions by	Dismissing Complaints	Granting Reductions or Reparations
Chairman Clark	6	10
Commissioner Prouty	9	11
Commissioner Clements	17	11
Commissioner Lane	0	3
Commissioner Marble	3	3
Commissioner Harlan	4	12
Commissioner Meyer	8	19
Commissioner McChord	3	11
The Commission	68	78
Total	118	158
Percentage	42.8	57.2

"This brings the record for the past five years, since the Bureau began analyzing it, down to date as follows:

Number of Decisions.

Year	Dismissing Complaints	Per Cent	Reparations or Reductions	Per Cent
1909	138	39.7	219	61.3
1910	138	41.1	198	58.9
1911	93	37.4	156	62.6
1912	132	35.2	243	64.8
1913	118	42.8	158	57.2
Total	619	38.8	974	61.2

"Coincident with the 158 reported opinions reducing rates, etc., mentioned above the Commission entered no less than 3,211 "Informal Reparation Orders' including 100 'Unreported Opinions,' all tending to reduce the net revenue of the railways. In the meantime it entered 64 opinions suspending tariffs and 46 vacating suspensions on the Investigation and Suspension Docket. It also rejected 589 freight tariffs and 224 passenger tariffs without filing opinions.

"While these figures do not begin to exhaust the Commission's activities they fairly represent the general trend of its opinions and decisions."

Some Plain Facts Regarding the Railway Situation

Address of Ivy L. Lee, Executive Assistant, Pennsylvania R. R. Co., Before Wilmington, Del., Chamber of Commerce, April 14, 1914.

I WONDER whether you would have invited me to appear on this occasion had you known of a speech which was made in Congress yesterday by Senator Cummins. Senator Cummins is reported in the newspapers of to-day as having, among others, made these remarks with reference to the five per cent freight rate increase:

> "In connection with the proceeding before the commission there is in progress the most comprehensive, energetic and persistent campaign I have ever witnessed to make the people of the country believe that the effort of the Government to regulate railroads, railway rates and railway practices has resulted in dismal, disastrous failure.
>
> "The railroads are trying to mislead and pervert the judgment of the people. They are trying to awaken sympathy by false pretenses. They are trying to deceive the country with exaggerated cries of suffering and distress.
>
> "This extraordinary campaign has filled the newspapers with headlines, with dispatches. It gives dinners and holds public banquets where the eloquence of orators paints lurid pictures of empty treasuries, of worn-out tracks, of falling bridges and dilapidated equipment."

This luncheon would seem, therefore, to be one of those occasions where we have already been convicted of trying to deceive the people and ourselves as well, and to awaken sympathy by false pretenses.

To be quite frank, it hardly seems fair that a speech of that kind should be made in Congress. We are accused of having conducted a nefarious campaign to mislead the public and to prejudge the case now before the Interstate Commerce Commission. And yet, a Senator of the United States comes out upon the floor of the Senate and proclaims that the case we are trying to make out is absolutely without warrant. I don't condemn Senator Cummins for his speech. It seems to me that from his point of view it is quite a proper speech to make, assuming that we also have the right to reply. But to accuse the railroads of trying to mislead the public hardly seems fair when an effort is being made to prejudge the case in the United States Senate.

Now since Senator Cummins has made this speech, I would like to tell you precisely what the railroads have done in this freight rate campaign. I happen to have personal knowledge of what I speak. We are accused in this speech of having inspired newspaper headlines, and I know that there are a large number of people in Washington who believe the attitude of the press in this matter has been stimulated by subterranean methods hardly worthy of public approval.

Now I know what has been done. Before this case was presented to the Interstate Commerce Commission, we came to the conclusion that the methods used in 1910 were unfortunate in that we had not taken our case to the people as well as to the Commission. We therefore asked our officers to go here and there before Chambers of Commerce, Boards of Trade, business organizations and so forth and present to them the case we expected to present to the Interstate Commerce Commission. Before the hearings were held in the presence of the Commission some of our representatives went to the Commission itself and said in substance:

> "We don't intend to rely upon the casual newspaper reports for the people of this country to learn the reasons which we shall present to you and upon which we ask for this increase in rates.
>
> "We are going further than that. We propose after each hearing to make a short, succinct extract of every important fact which we present to you under oath. We intend to send such a resume to every important newspaper in the United States, we intend to send it to the mayors of cities, to the secretaries of chambers of commerce in the various cities, to members of every State legislature, to every State Railroad Commission, to postmasters in the principal cities, to college libraries, city libraries, and professors of economics in colleges. We intend that the people interested shall be fully informed as to every salient fact which we present to you. This, not to appeal from the Commission to the people, but to let the people know our position."

We asked the Commission, before that plan was undertaken, if they had any objections to make. We received a letter which is on file, a letter stating that the Commission had no comments to make thereon. From this letter we had the right to assume that the Commission had no criticism to make on this scheme, assuming, of course, it was carried out in good faith.

We have followed this plan carefully; we have tried to bring to public attention every pertinent fact which we have presented to the Interstate Commerce Commission. We have tried to make that campaign as intelligent, as comprehensive, as energetic, as it could have been made. We have restricted reference absolutely to matters of record. In order that everything should be open and above board, we have sent to the Commission several copies of every one of our publications. That is the entire extent of our newspaper campaign. If that is not a fair way to go to the people with a proposition, what is the meaning of the word "fair"?

The campaign has been successful to a very large extent. The people are with us, and public sentiment in this country to-day appears to be largely in favor of the advance in freight rates. But it is inconceivable to a large number of people that this sentiment should have been developed by perfectly straightforward methods. We have been chided in the past for not having taken people into our confidence. When we take the people into our confidence, take them into our confidence with such palpable sincerity and completeness that we gain in return the confidence and support of the people, some of our friends in Washington think the Devil has surely been at work somewhere although they are unable to discover the exact method.

The railroads have been accused—they were accused yesterday—on the floor of the Senate of the United States of having discharged a large number of employes for the purpose of affecting the decision of the Interstate Commerce Commission in this case. Now, gentlemen, that is a very serious charge. Our company, it is true, has discharged or furloughed about 38,000 men since the first of last October. But is it conceivable that a company like ours—and you must pardon me if I refer more or less to the Pennsylvania Railroad, because it is with that railroad I am employed and therefore most familiar—is it conceivable that a company like ours, with its record of harmonious relations with its employes, with a knowledge that so many of its employes must have of its actual condition, is it conceivable that we would play fast and loose with the daily bread of 40,000 employes for the sake of affecting the decision of any tribunal?

If that were conceivable, consider this fact: Business began to fall off with us very decidedly about the first of October. We were at that time employing on the Lines East of Pittsburgh about 142,000 men. This drop in business conditions continued through November and December with an accelerating pace.

Our officers had been instructed all over the system to economize wherever possible, to cut things down as near to bed-rock as they could. A good many men were laid off and a good many more were put on short time. We came up then to the month of February, hoping continually that business would improve and that drastic cuts either in personnel or in the service would be rendered unnecessary.

We had up to that time resisted what seemed to be the common sense of the proposition and kept on a very much larger number of men than business required. But what was the result in the month of February of hoping against hope and trying to fight off what we all regarded as only a device of last resort? This was the situation when the February figures came in, in the middle of March. We found that our business for the month of February this year was $2,000,000 less than in the month of February last year. These figures are gross. In February of 1914, we found that we had earned almost exactly what we did in February in 1910, that is $15,000,000 gross on the Lines East of Pittsburgh. Yet we found that during the month of February, 1910, we earned net revenue of $3,000,000 out of that $15,000,000 gross. In 1914, we earned the same amount of gross, namely, $15,000,000 but only $1,200,000 net, a loss of $1,800,000 in net. We found that this same gross business in 1914 of $15,000,000 was done with about 13,000 more men than we had in February, 1910.

With such a serious depletion of revenue, such a tremendous cut in net, a failure in that particular month even to earn the dividend on the Pennsylvania stock, it was obviously necessary to make a drastic cut in expenses. The way it was reasoned out was that the same number of men ought to be able in 1914 to handle the same amount of business that the same number of men did in 1910, especially as during the interval practically all of these men had had from five to ten per cent increases in wages.

That was a situation which could not be trifled with; these were figures that were plain to everyone; it is perfectly certain that if these figures had not been plain to everyone, we would not have been permitted to discharge all of these men without facing a Congressional investigation. What would have been even worse would have been any thought of such a painful policy except under conditions of peremptory necessity.

To accuse the railroads, the Pennsylvania Railroad along with others, of trifling with matters of that kind seems to betray a state of mind on the part of some people in Congress, and some people, serious minded throughout the country, which is at bottom the most serious phase of the whole railroad situation.

In discussing the state of affairs which prevails with the railroads to-day, let us first clear the ground of underbrush. In the first place, I think we can all agree to this, that you can't take any more money out of a railroad treasury than is already there. The railroad treasury is not an inexhaustible reservoir of money.

In the second place, I hope we can further agree that it is quite as important to the people to have good railroad service as it is to the railroads to be able to render good service and pay good dividends. I am sure I don't need to take up that point.

In the third place, let us agree, and I think we can without much trouble, that the proposition to increase freight rates has not been brought about by the present depression of business. Last May, when we were doing a very large gross business, we presented this position for increased freight rates. We felt then that conditions had already promised to describe a curve of trouble for the railroads and subsequent events have proven that our prediction was correct.

This is the fact that the railroads east of the Mississippi River were faced with at the end of June, last year. They found that for the three preceding years they had invested in their properties $660,000,000 in new money accounted for under the new accounting regulations of the Interstate Commerce Commission. During that time their gross business had increased by $186,000,000. Their expenses, however, during the same time, a period of three years, before this era of depression had set in, their expenses increased more than $203,000,000. So that at the end of the three years the railroads in this territory were $17,000,000 worse off in net revenue than they were in 1910, before the $660,000,000 had been spent.

No money spent into a railroad is money spent for keeps. You cannot take it out. You must, therefore, realize that when confronted with results such as I have mentioned, and railroad men sought new money for additional improvements and facilities, investors must have shared somewhat the feelings of the young woman whose bashful lover was very much distressed as to how to propose. So he finally hit upon a plan, after a great many had passed through his mind. He took the young lady, on a bright, moonlight night to the village churchyard. They came in sight of the graveyard and then the young fellow said to his lady friend: "My family are all buried there; wouldn't you like to be buried there too?"

Let us further agree that there is no need to defend past bad practices of any railroads. It is impossible. We cannot ask for 100 per cent purity in the railroad business any more than in any other business. But this I do know, and I think you know, also, that the railroad systems of the United States do their business for cheaper freight rates; they pay their labor higher wages; they pay more taxes in percentage to the amount invested, than in any other country in the world. That would seem to argue efficiency.

We also know that no other business in the country has ever been given the castigation and thorough cleaning out which the railroad business has undergone in the past ten years. I believe to-day that the railroad managers of this country are performing their duty to the public and to their shareholders in a manner that is equal if not superior to the performance in any other business in the United States.

We cannot have 100 per cent purity. There will always be things done which ought not to be done. But we have got to face a real condition: How can we, taking matters as they are, taking men as they are, how can we get the best practical result with the best means which are available? That is the railroad problem.

Whatever may be your views as to a good many of the railroads, I think you will probably all agree that the Pennsylvania Railroad has been fairly well and honestly managed throughout the period of its existence. If the Pennsylvania Railroad is in great need of additional revenue, is it not fair to assume other railroads, possibly not so well managed, are in the same if not a much worse predicament?

What is the position of the Pennsylvania Railroad? During the last fifteen years, since 1898, freight rates in this country have been placed on a stable basis, rebates have been eliminated, we have had some increases in commodity rates, and we have had the benefit of an enormous expenditure of new capital for the improvement of the property, thus bringing greater efficiency and a greater convenience to the public.

In the light of all this, consider the following: At the beginning of 1898, we were just emerging from a most disastrous period of railroad history. And during the time that has elapsed we have had the benefit of all of these developments. With what result? Our property investment—and our property investment means money spent on the property, because we have had a continuous accounting from the beginning up to the present day; there is no water in it,—our property investment on the Pennsylvania Railroad in 1898 was $797,000,000; in 1913 it was $1,398,000,000, an increase of about 47 per cent. During that time our operating revenues increased from $145,000,000 to $382,000,000, an increase of 163 per cent. Property investment increased 45 per cent; gross revenue increased 163 per cent.

Now from that it would appear that we ought to have been able to make a very large increase in net revenue, and that our position to-day ought to be much more satisfactory than it was in 1898. What are the facts? The facts are that in 1898 on this property investment we earned 5.45 per cent and in 1913 we earned 5.48 per cent on the property investment, in net revenue.

In other words, after partaking of the benefits of stable rates, the abolition of passes, the great improvements in trade practices, some increases in commodity rates, and the great expenditure on facilities, we were able only to earn in 1913, .03 per cent more than we did in 1898, and the return in 1913 was the lowest in any year with the exception of 1899, in that ten-year period. That, to say the least, is dangerous, unless checked.

The Pennsylvania Railroad dividend is not threatened. It can continue to operate for some time without an increase in freight rates. But if this company is to continue to expand, to give the increased service which the increased business of the country demands, some further attraction must be provided for the new money with which to provide these new facilities.

Now, why is it that all of this has happened? Why is it that we have been unable to get a greater amount of net revenue from the very large increase in gross business.

In the first place, we pay our labor to-day 37 per cent more than we did ten years ago. Our company paid out almost $200,000,000 in wages last year. If our employes had in 1913 worked on the basis of pay of 1902, we would have paid out last year instead of $200,000,000, the sum of $125,000,000. There is $75,000,000 accounted for right away.

Taxes are going up at an astonishing pace. Railroads pay 19 per cent of all taxes paid in Pennsylvania and 46 per cent of all taxes in the State of New Jersey, and the ratio is constantly increasing.

But the railroads are subjected to a vast amount of regulatory measures by State Legislatures. And right here let me interject the remark, gentlemen, that we are not protesting against regulation. Enlightened railroad managers believe that regulation by commission is a good thing provided the regulation is prompt, impartial and actuated by regard for the general public interest. But it is a very different matter to be subject to arbitrary measures by State Legislatures, passed very often at the behest of labor unions.

Now let us cite two or three instances of what we have in mind. Extra crew laws, adding unnecessary men to trains are costing our system alone $1,100,000 per annum. That is the interest at five per cent on $22,000,000 of capital. We are paying out because of semi-monthly pay laws—which are wholly unnecessary, and only in the interest of improvident employes—we are paying out because of these laws about $400,000 per annum, and this at five per cent is the interest on $8,000,000. We are paying out because of Federal hours of service law—a law which I won't take the time now to explain, but which I ask you to take my word for, in the opinion of competent railroad men, does not accomplish material good—we are paying out $800,000 a year on that account.

These three items capitalized at five per cent represent the interest on $46,000,000 of capital. In other words, if we had spent $46,000,000 of capital on which we had to pay an annual interest of five per cent and if we did not earn one cent of net revenue on the expediture, but had applied it to give some additional service to the public, we would be far better off than we are now, without increased efficiency or safety.

Gentlemen, we are in the regulation of railroads in this country in the condition that the practice of medicine was about one hundred years ago. You remember that when a doctor of medicine was called in in those days about the first thing he would think of doing to any patient was to bleed him. The thought was that if he let out a little blood, he might at the same time let out some of the impurities and perhaps the patient would be better off for that experience. Nowadays we know that the patient must be strengthened.

I was very much interested the other day in reading the diary of George Washington's private secretary describing the last day on earth of the first President of our country. This was published in "McClure's Magazine" in 1898, and has, I believe, every evidence of authenticity:

"December 14, 1799.

"Between two and three o'clock, Saturday morning, he awoke Mrs. Washington and told her that he was

very unwell and had an ague. She observed that he could scarcely speak and breathed with difficulty.

"I despatched a servant instantly for Rawlin (a professional bleeder). Rawlins came in soon after sunrise and prepared to bleed him.

"Dr. Craik came in soon after and upon examining the General, put a blister of cantharides on the throat and took some more blood from him.

"About 11 o'clock Dr. Craik requested that Dr. Dick be sent for as he feared Dr. Brown might not come in time. About this time the General was bled again.

"Dr. Dick came in about 3 o'clock, and Dr. Brown arrived soon after. Upon Dr. Dick's seeing the General and consulting a few minutes with Dr. Craik, he was bled again.

"That evening between ten and eleven, he expired without a struggle or a sigh."

May railroad bleeding stop before it is too late!

Now, gentlemen, I am not going to take any more of your time. I ask you to view this case from this point of view: That the railroad can continue to give their present services without increased rates—at least the Pennsylvania Railroad can—paying the present rates of wages, without further improvements in the service and without increased service; but if the railroads of this country are to expand, if they are to grow with the people and with trade, if they are to be able to give that increased standard of service which the public demands and rightfully should demand, the railroads must be permitted to earn a return upon the additional money with which to provide the new facilities. That is a plain business proposition.

I am not here to attempt to prejudge the case before the Interstate Commerce Commission. We have presented our case and we are prepared to abide by the judgment of that tribunal. Railroad managers feel that they need additional revenue. But more than that, they need the confidence of the public.

The railroads cannot thrive, they cannot live, unless they have in their day-to-day affairs the confidence of the public with whom they deal.

When all is said and done, the greatest necessity of the whole railroad situation is to restore the confidence of the people in the good faith and earnestness of honest men. When that is accomplished, we will make real progress.

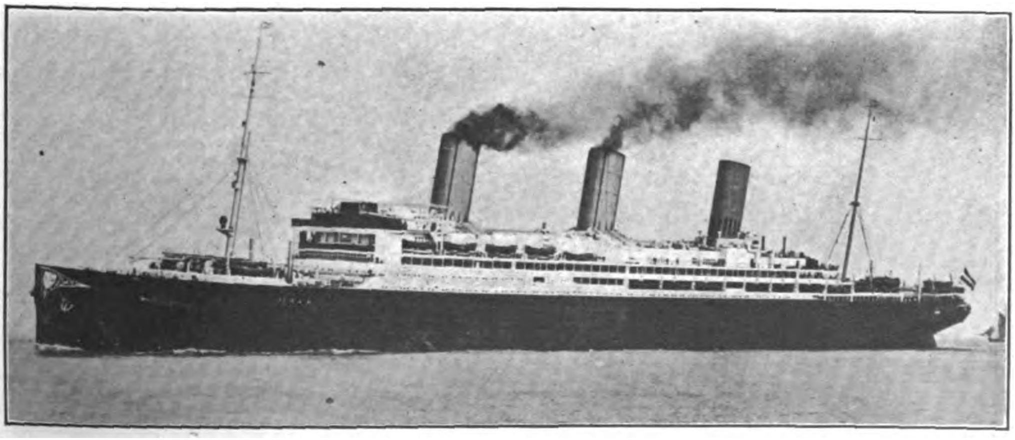
The World's Largest Ship

THE new steamship Vaterland of the Hamburg-American Line, recently completed on the other side of the Atlantic, has the distinction of being the largest ship in the world. While closely resembling her famous sister ship, the Imperator, the new queen of the seas exceeds her in all dimensions. The Vaterland measures 950 feet, or nearly five city blocks in length, 100 feet in width, and has a tonnage of 58,000. The leading decorators of Europe have been engaged to design and furnish her sumptuous cabins, each of which is a masterpiece in its decorative style. The Vaterland sailed from Hamburg on her maiden trip May 14th, arriving in New York on May 21st.

Every conceivable precaution has been taken in the construction and equipment of the Vaterland to assure complete safety. As in the case of the Imperator her hull has been constructed with a complete inner skin carried high above the water line, making her a ship within a ship. She is provided with both longitudinal and transverse bulkheads giving her a cellular construction, rendering her proof against collisions and similar accidents. She carries life boats more than sufficient to accommodate all on board. Her powerful wireless apparatus enables her to keep continuously in touch with land. A unique feature is a complete fire department recruited from the fire departments of German cities. The efficiency of her equipment is assured by frequent drills and rigid discipline.

The Vaterland has many original features. She is the first steamer ever built with funnels which do not pass directly through the centres of the decks. Each of her three great funnels divides in the form of the letter "Y" at a point beneath the lowest passenger deck, and join again in a single tube which rises above her uppermost deck. The space occupied by the ordinary funnels passing through the middle of the decks is thus left clear, and the public cabins may thus occupy the deck without obstruction.

Taking advantage of this new arrangement of the funnels the grand dining room of the Vaterland will be unique. It will accommodate 800 pas-



THE HAMBURG AMERICAN LINE'S NEW STEAMSHIP VATERLAND, THE WORLD'S LARGEST SHIP.

THE WINTER GARDEN ON THE STEAMSHIP VATERLAND.

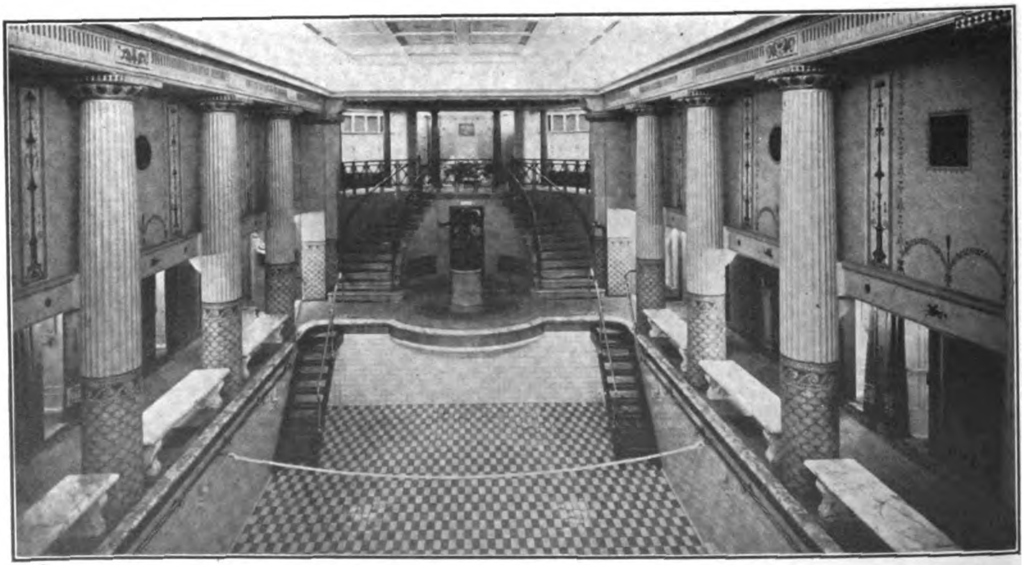
sengers at one time, all seated upon the same deck. The great size and steadiness of the steamer make it possible to furnish the dining room with movable dining room chairs, in place of the swivel seats firmly attached to the floors, common to ocean steamers. In addition to the regular dining room, the Vaterland will have an elaborate Ritz-Carlton restaurant, a grill room, and a palm garden. The main dining room of the Ritz is built oval in form, exactly reproducing its counterpart in New York City.

The great social hall of the Vaterland is even larger than the famous ball room of the Imperator which has attracted worldwide attention. This sumptuous public cabin will be the largest ever constructed on shipboard. It is roofed with glass, uninterrupted by pillars or support of any kind, and illuminated by concealed lights. The woodwork throughout is richly carved, the walls are panelled with rare tapestries and set with statues. A unique feature of the social hall is a theatrical stage.

The elaborate swimming pool of the Vaterland and her various electric therapeutic, and other baths lend her the attraction of a great spa or bathing resort. The pool which reproduces a Roman bath extends through three decks. It consists of three large rooms, an entrance hall, with hand painted walls and a floor of ornamental mosaics, an antichamber roofed with glass, and the pool. The roof of the pool is supported by ten marble pillars, and arranged along the sides are twenty-eight bath cabins. In these rooms will be found electric light baths, water cures, carbonic acid baths, needle baths, massage rooms, a barber shop, hair dressing parlor, etc. The pool is constantly refilled and kept at a uniform temperature.

The smoking room of the Vaterland is one of the largest and most luxurious cabins ever devoted to the purpose. It has been placed on an upper deck forward, occupying the space usually taken by the officers' quarters, and extends the width of the ship. The smoking room is, therefore, open on three sides, thus assuring perfect ventilation and excellent light. The cabin has been sumptuously decorated with a wealth of rich panelling and carving. A deep fireplace and several recessed seats and cosey corners lend a homelike appearance to the great room. Opening directly from the smoking room are two writing rooms for gentlemen.

The great size of the Vaterland has made it possible to make her staterooms unusually commodious. The Vaterland is the first ship to be



THE ROMAN BATH ON THE STEAMSHIP VATERLAND.

built with three passageways running lengthways, which serve to supply every stateroom with abundant light and fresh air, and give the ship an effect of roominess throughout. In every stateroom artistic bedsteads replace the built in beds or berths, common to most ships. Each room is besides supplied with a marble washstand and with both running hot and cold water. Special attention has been paid to the mirrors of the staterooms, and the arrangement of lights and the closet space.

The passengers on the Vaterland have the choice of a great variety of private suites which assure the privacy of one's own home throughout the crossing. These suites vary in size from two to twelve rooms. They are furnished in a variety of decorative styles and color schemes to satisfy every taste. The most elaborate of these suites known as the Imperial Suites, include bedrooms, sitting room, breakfast room, two baths, servants' rooms and a private deck. A large proportion of the staterooms have private bath rooms and the other baths are so distributed as to be convenient to every stateroom. In the first cabin alone there are more than 250 baths.

One of the most important innovations in the equipment of the Vaterland and Imperator is the fire department, composed of experienced fire fighters recruited from the fire departments of German cities. A large cabin centrally located has been set aside as the fire headquarters, and here are located the various signalling devices and indicators, running to all parts of the ship. The special equipment includes, a chemical fire engine, smoke helmets, and other fire apparatus. The firemen patrol the ship day and night and are constantly on duty at their headquarters. A complete system of automatic sprinklers has been installed both on the Vaterland and Imperator.

An important innovation has been made in the steerage accommodations both on the Vaterland and Imperator. The steerage passengers will occupy separate rooms, for two, four or six persons, instead of the dormitories formerly used. They have besides the use of private bath rooms and a laundry. The cabins occupied by immigrants on these great ships assure greater comfort than did the first cabins of steamers a generation ago. The stewards waiting on the tables in the sterage will besides speak all the languages of all the nationalities represented by these cosmopolitan passengers.

Tehuantepec and Panama Trans-Isthmian Rail Traffic During 1913.—Two small isthmian railways—the Panama Railway, forty miles in length and the Tehuantepec Railway, 190 miles long—carried in 1913, $130,500,000 worth of merchandise, brought to their termini by vessels from the United States to be reloaded at the opposite termini and shipped to other ports of the United States and to foreign countries. This is double the amount thus transported in 1908, one year after the opening of the Tehuantepec Line.

The value of American products carried across the isthmuses in this circuitous intercoastal traffic was, via Panama, $31,000,000 and via Tehuantepec, $99,500,000. Two-thirds of this trade, according to the latest compilations of the Bureau of Foreign and Domestic Commerce, Department of Commerce, moved westward, $23,700,000 worth via Panama and $62,400,000 via Tehuantepec, while the remainder moved eastward, $7,300,000 across the Panama Line and $37,100,000 worth over the more northerly transisthmian line.

Only a few American ports participate in this transisthmian traffic. Of the westward movement $84,000,000 worth of merchandise was shipped from New York, $2,200,000 worth from New Orleans, and but $2,500 worth from Boston. The east bound traffic included $21,800,000 worth from San Francisco, $18,200,000 from Hawaii, $2,100,000 worth from ports in the State of Washington, $1,800,000 from ports in Southern California and about $400,000 worth from the State of Oregon.

Financial

The Outlook as Viewed by Prominent Men and Institutions.

THE combined opinion of various financial and trade authorities, bankers and prominent business men as reported by the daily press, holds little of encouragement so far as the immediate business outlook is concerned. The People's National Bank of Pittsburgh, reports that in the Pittsburgh District there were no encouraging developments last month in connection with its chief industries and that price concessions in steel products, coal and coke, did not induce contracting ahead for probable needs. In the steel trade, the manufacturers' average prices were unprofitable and in some departments current consumption did not take up even the average output. During the first half of the month, mills producing other than railroad supplies, operated about sixty to seventy-five per cent of capacity, but during the latter half of the month even these mills were not making stock in some instances and indications are that May will witness further curtailment, unless a speedy and favorable decision in the railroad freight rate case is reached. The unsettled conditions in Mexico have already stopped extensive oil fields in that country in which Pittsburgh capital is largely interested. Railroad tonnage in the Pittsburgh District suffered a material reduction during April as a consequence of industrial contraction.

"Dun's Review" sees some betterment in certain branches of trade but in others a further moderate recession in activities. Fundamental conditions are sound, however, and the agricultural outlook augurs well for the future, yet hesitancy is general in anticipating forward requirements. Production is being curtailed and mill forces reduced, the policy of the railroads in confining purchases to the lowest possible limits, constituting the chief drawback.

James A. Penton, secretary of the American Pig Iron Association, states that there is a feeling of unrest and distrust throughout the country which is keeping people from spending money except where absolutely necessary. New work is practically at a stand still and industrial corporations will not enlarge until they have assurance or at least hope that the Government will cease its attempts to destroy business instead of aiding it.

Bradstreet's points out that the excellent reports as to crop prospects strikingly contrast with advices of irregularity in trade industry. Manufacturing operations reflect these conditions more strongly than heretofore and it is probable that curtailment in the iron and steel trades has gained additional force.

Nelson, Cook and Company are of the opinion that financial, industrial and commercial affairs are drifting along in rather a hopeless, helpless way, waiting for the determination and settlement of the many important problems now confronting the country. More particularly, a decision of the Interstate Commerce Commission in the railroad rate question, it awaited with anxious solicitude. The opinion prevails that the Commission will grant at least a portion of the increased rates asked for. This as Nelson, Cook and Company points out, will of course, help a little, but in their opinion the full increase of five per cent is not sufficient. The attitude of Congress on trust legislation and the present situation with regard to Mexican affairs are also held partly responsible for the prevailing uncertainty in business conditions.

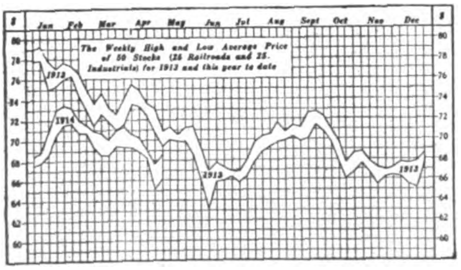
The "Iron Trade Review" reports that the iron and steel trade continues to drag out an uncertain course with no visible signs of general improvement. Mill operations continue to be reduced gradually to meet the reduced volume of business. The pig iron markets are at minimum activity.

The "Iron Age" points to a deficit of more than $6,000,000 in the quarterly statement of the United States Steel Corporation which is practically the amount of the common stock dividend. Corporation profits of $6 to $7 a ton on the shipments of the first quarter mean a dismal showing for steel companies which normally make several dollars a ton less than the corporation. April has been a poorer month than the average of the first three. May and June, if there is an early rate advance, can do better, but otherwise the betterment is not in sight to-day.

The Stock Market.

THE following chart which appeared in a recent issue of the New York "Times Annalist" shows the trend in the prices of leading securities, during 1913 and the first four months of the current year. As indicated, leading stocks are considerably below their average of a year ago, transactions have been extremely light and the trading largely professional.

The Course of the Market



The bond market is also inactive and so far as the railways are concerned, could hardly be worse. No effort is being made at the present time to procure new capital except for the purpose of caring for maturing obligations and even in the event of an increase of rates, certainly not unless the full five per cent is granted can there be expected much immediate activity in the way of new bond issues. The railways have been passing through one of the most severe periods of their history and the lessons received have been sharp enough to cause extreme conservatism to be a controlling factor for some time to come.

Railway Earnings for Fiscal Year.

THE thirty-five railroad systems in Official Classification Territory which are applying for a five per cent increase in freight rates, have compiled and filed with the Interstate Commerce Commission data setting forth results of their operations for the first eight months of the present fiscal year.

During the period from July 1, 1913, to February 28, 1914, the revenues of these companies decreased from $931,508,361 to $910,346,537 as compared with the previous year.

For the same period expenses increased from $645,404,193 to $693,364,514.

There was thus a decrease in revenues of $21,161,824, and an increase in expenses amounting to $37,960,321—or a loss in net operating income of $59,122,145.

When the foregoing fact is added an increase in taxes of $2,507,471 and a decrease in net revenue from outside operations, there is shown a loss in operating income of $69,355,881, or 26 per cent.

Assuming that no additional money has been invested in these properties since July 1st of last year, the returns for the current eight months show 4.47 per cent earned on property investment, as against 5.53 per cent in the corresponding eight months of last year.

The Pennsylvania System in the same period shows 4.92 per cent as against 5.56 per cent in 1913.

The New York Central Lines show 3.56 per cent as against 5.63 per cent in 1913.

The Baltimore & Ohio System shows 4.10 per cent as against 4.63 per cent in 1913.

The Erie System shows 2.75 per cent, as against 3.91 per cent in 1913.

The Pennsylvania Railroad System, Baltimore & Ohio System and New York Central Lines show 4.23 per cent, as against 5.44 per cent in 1913.

The rate of return on property investment that is shown by all these railroads for this portion of the present year is the smallest of any year in the last fifteen years.

New Haven Syndicate Formed.

J. P. MORGAN & CO., the National City Bank, the First National Bank, Kidder, Peabody & Co., and Lee, Higginson & Co. have completed the formation of a syndicate to underwrite the $20,000,000 New Haven one-year five per cent notes; $20,000,000 Harlem River & Port Chester one-year five per cent notes, and $20,000,000 New England Navigation Company three-year six per cent notes purchased by them. The Harlem River & Port Chester notes are indorsed by the New Haven, but the New Haven and New England Navigation notes have various treasury securities as collateral. The $20,000,000 Harlem & Port Chester one-year five per cent notes are a direct obligation on the properties of that company, which have cost $45,000,000. They are preceded by only $15,000,000 of first mortgage bonds, leaving an equity at cost prices of $30,000,000 for the $20,000,000 notes sold, and $7,500,000 junior notes deposited back of New Haven's notes. The full list of the collateral for the other two issues of notes has not been announced.

The underwriting syndicate will, it is understood, offer the $20,000,000 New England Navigation Co. 3-year six per cent notes at 99½, and the $20,000,000 New Haven one-year five per cent notes and the $20,000,000 Harlem River & Port Chester one-year five per cent notes, endorsed by the New Haven, at 99.

The bankers' syndicate purchased the $60,000,000 New Haven and subsidiary notes at 98, netting the New Haven $58,800,000 or $4,800,000 in excess of the $54,000,000 note maturities prior to July 26th.

The New Haven management says that the $4,800,000 will provide cash for all the railroad's addition and betterment necessities and that in these times only necessities can be attended to.

Railway Revenues and Expenses for February.

THE latest figures of the Bureau of Railway Economics at Washington, only serve to emphasize the grave situation which confronts the railways, particularly those in Eastern territory, because of a constantly and rapidly diminishing net revenue. Returns for February reported by this Bureau and reduced to a per mile of line basis for the purpose of comparing them with the returns for February, 1913, show a decrease in total operating revenues per mile of 11 per cent, and a decrease in operating expenses per mile of 3.1 per cent. Net operating revenue per mile was less by $88.00 or 33.8 per cent than for February, 1913, while that for February, 1913, was 2.4 per cent greater than for February, 1912.

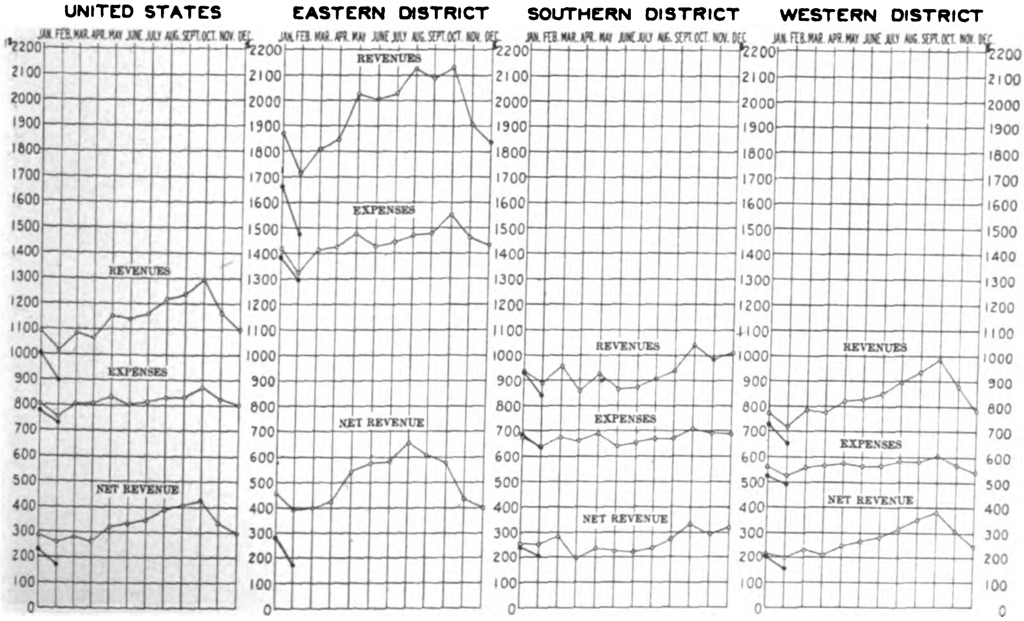
Railways operating 225,539 miles of line are covered by this summary, or about ninety per cent of all steam railway mileage in the United States. Their operating revenues for the month of February, 1914, amounted to $203,022,222. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation.

Compared with February, 1913, total operating revenues show a decrease of $23,330,211. Total operating revenues per mile of line averaged $900 in February, 1914, and $1,011 in February, 1913, a decrease of $111 or 11.0 per cent. There were decreases of 13.1 per cent in freight revenue per mile and of 5.4 per cent in passenger revenue per mile.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $164,379,406. This was $4,031,222 less than for February, 1913. These operating expenses per mile of line averaged $729 in February, 1914, and $752 in February, 1913, a decrease of $23 per mile, or 3.1 per cent.

Net operating revenue, that is, total operating revenues less operating expenses, amounted to $38,642,816, which was $19,298,989 less than for February, 1913. Net operating revenues per mile

RAILWAY REVENUES AND EXPENSES PER MILE OF LINE DURING THE CALENDER YEAR 1913, AND JANUARY AND FEBRUARY OF 1914.



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

of line averaged $171 in February, 1914, and $259 in February, 1913, a decrease of $88 per mile, or 33.8 per cent.

Taxes for the month of February amounted to $11,276,646, or $50 per mile, an increase of 10.3 per cent, over February, 1913.

Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $119 per mile of line, and in February, 1913, $212, thus decreasing $93, or 44.0 per cent. Operating income for each mile of line for each day in February averaged $4.25 and for February, 1913, $7.58. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction and for dividends.

The operating ratio for February, that is, the per cent of total operating revenues absorbed in operating expenses, was 81.0 per cent, which is comparable with 74.4 per cent in February, 1913, and 73.7 per cent in February, 1912.

The accompanying diagram shows the monthly revenues and expenses per mile of line of roads having annual operating revenues of $1,000,000 or over. It will be noted that the Eastern roads have felt more severely the decrease in net earnings than have either the South or Western roads.

Railroad Losses from Colorado Coal Strike.

COLORADO & SOUTHERN and Denver & Rio Grande, each operating a heavy proportion of its mileage in Colorado and depending for 35 per cent and 30 per cent of total tonnage, respectively, on bituminous coal, are the carriers which have suffered most severely from the protracted labor disturbance in the Southern Colorado coal fields since last September. Mining of coal in those districts has been at a practical standstill since early last fall. The output of the entire state has been reduced to about half the normal figure.

Continuous losses in gross and net since September resulted in a loss in gross revenues for Colorado & Southern of $1,000,000, or ten per cent, compared with a year ago. This decline in total revenues was carried down through net to final surplus after charges, which amounted to only $515,000 this year against $1,551,000 in the same months of last year.

Denver's gross in the eight months declined $773,000—or 4½ per cent—which was reduced somewhat by economy in transportation expenses but not enough to prevent a loss of 46 per cent in final surplus after charges.

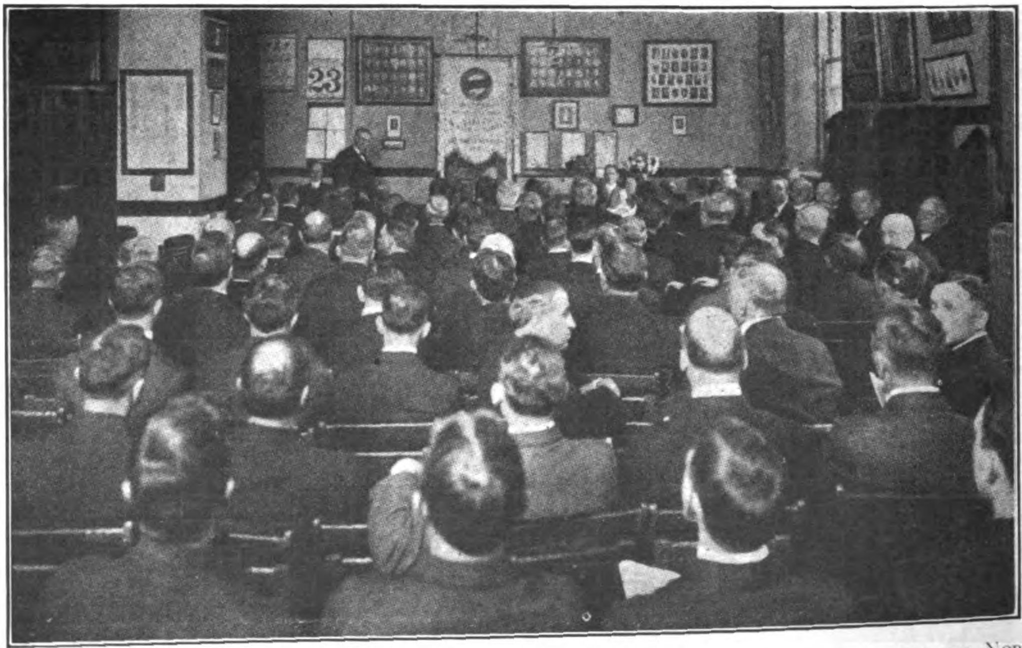
Operation

Chicago and North Western Line Awards Safety Banner.

THE Wisconsin Division of the Chicago and North Western Railroad has been awarded the safety first banner for the highest averages along safety lines of any division of the system during 1913. The Iowa and Minnesota divisions received honorable mention.

In presenting the banner to the successful division, Ralph C. Richards, chairman of the Central Safety Committee, of the Road, spoke as follows:

"One of our great educators has said 'that



Presenting the Safety First Banner to the Wisconsin Division of the Chicago and North Western Railroad.

the world turns aside to let any man pass who knows whither he is going.' And so it is on this railroad of ours; all the men on the other divisions turn aside to let the men on the Wisconsin Division pass because you know whither you are going, and if they ask you, you will tell them that your destination is called 'Conservation, not of property, or rivers, or minerals, or timber, or land, but of those priceless things, your lives and your limbs, that none of you will part with for love or money.'

"You men of the Wisconsin Division have passed two of the milestones in your journey, and each year you are getting nearer to your destination, and so, as an evidence of your achievement during the year 1913, I have been directed by the Central Safety Committee, and it is my great pleasure, for the second time to present to you the banner which each year is awarded by that committee to the division having the best record for safety in work and travel on the safest and best railroad in the country; and at the same time to express to you the thanks of the Committee, of the men and of the management of the Chicago and North Western Ry. Co., for the splendid work you have done for the conservation of human life."

Efficiency Tests on the Pennsylvania.

REPORTS just compiled show that during 1913 exactly 215,279 efficiency tests were made to ascertain the observance of train safety rules on the Pennsylvania Railroad between New York and Philadelphia—the New York Division—and 99.65 per cent showed perfect performance.

One thousand and fifty-seven checks were made of the observance of signals set at "danger," and the result was practically perfect. In two cases trains passed signals by only sixteen or seventeen feet, but they were counted as failures. These were the only trains that failed to come to a stop at a danger signal.

The other tests were of rules concerning "Engineer's Observance of Flagman's Signal," "Flagman's Performance," "Conformity to Speed Regulations," and similar ones.

In summarizing his report for the year, the Superintendent of the New York Division makes this comment:

"I think failures are becoming generally less each month, and I further feel that we are having better co-operation of the men in general in trying to comply with the rules."

Locomotive Speed Recorder Annunciator Being Tested by Baltimore and Ohio.

SAFETY of railroad travel is enhanced by a recorder annunciator invented and patented recently by Charles Edmonds, a mechanic in the shops of the Baltimore and Ohio Railroad, at Baltimore.

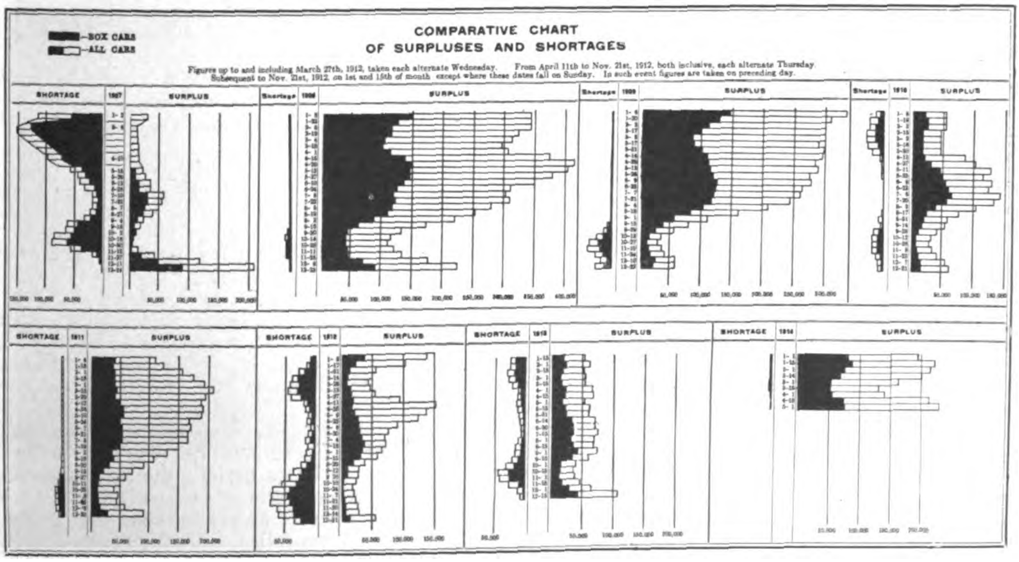
The new appliance consists of a signal system attached to the speed recorder and located in the cab of the locomotive to notify the engineer that the speed limit of safety prescribed by the rules has been reached. The signals are indicated by a gong which rings in the daytime, supplemented by a light which flashes before the engineer by night. Both signals work automatically and continue while the train is running one mile and a half.

The device has been tested on several locomotives in regular service and has been reported upon favorably. The Baltimore and Ohio is considering installing the annunciator on its locomotives in through train service, which, with many of the engines used on local runs, are equipped with speed recorders which indicate the rate of speed and make a record for each mile the train travels.

In adopting this method of train operation, the speed limits were fixed by the officials and by informing the engineers it has been possible to operate the trains with the greatest degree of public safety and comfort.

The Car Situation.

THE American Railway Association has issued its statement of car surpluses and shortages as to May 1, 1914. The total number of idle cars on that date was 230,533, compared with but 53,977 on May 1, 1913. Short-



ages on the same dates were for 1914, 1,654 cars and for 1913, 14,178. It is reported that a small shortage of box cars has developed in the middle west. The accompanying diagram shows the shortages and surpluses for a period of nearly seven and one-half years.

Contributory Negligences in Railway Accidents.

IN order to ascertain to what extent contributory negligence is responsible for accidents at railroad crossings of the public highways, a series of observations was conducted recently by the Baltimore and Ohio System which showed a reckless disregard on part of the public for personal safety and practically complete failure to heed the warning of watchmen, signals or crossing regulations.

A record was kept at several of the busiest crossings on the Baltimore and Ohio Southwestern and the Cincinnati, Hamilton and Dayton lines, and out of a total of 32,079 instances of the railroad tracks being crossed by motor vehicles, teams and pedestrians, only 298 were recorded where the rule of stopping, looking and listening, or stopping to receive a signal from the watchman before proceeding were observed, which shows less than one per cent efficiency by the public. Of the inefficient, 18,335 persons failed to get signals and kept moving over the crossing without looking in either direction; while 8,776 persons, failing to stop, looked in but one direction and 4,680 other persons failed to stop and depended only upon sight to insure their safety.

The observations were made at three street crossings in Cincinnati, also at North Vernon, Seymour, Vincennes and Rushville, Ind., East St. Louis, Springfield and Tuscola, Ill., and at Hamilton, Dayton and Celina, O. At most of these crossings there are two or more tracks and in the larger cities an average of from ten to thirty-five trains move over the crossings each hour of the day.

In Cincinnati, 184 motor vehicles crossed the railroad tracks without one strict observance of the rules. There were but 60 observances by teamsters of a total of 1,743 vehicles that crossed the tracks and of the 7,010 pedestrians only 376 took the proper precaution against accident. About the same ratio of efficiency was displayed by people who used the crossings in the other cities and towns, although in Vincennes, 115 motor vehicles complied strictly with traffic regulations, out of a total of 135 that crossed the tracks. On the other hand, at Springfield not one observance of the crossing regulations was noted out of 245 motor vehicles that passed over the railroad tracks. The best record of pedestrians was made by the citizens of North Vernon, 3,176 of whom crossed the tracks with 806 instances of full observance of the rules.

The problem of preventing accidents at railroad crossings of the public highways is one of such vital importance that the roads are making an appeal to the people to lend its assistance by exercising every precaution for personal safety. While enormous sums of money have been and are being spent by the roads in track elevations, as well as by the employment of watchmen and the installation of signal systems, it is estimated that to complete the program of eliminating all such crossings in this country would involve an expense running into billions of dollars. The chief engineer of the Baltimore & Ohio Railroad fixes the cost of such improvements on his road at three hundred and fifty million dollars.

Supplemental to its plans of eliminating crossings, the Baltimore and Ohio recently revised its rules defining the duties of watchmen. The watchmen were given uniform caps identifying them before the public by means of a badge. This class of employes are drilled in the proper performance of duty and are required to undergo an examination as to their fitness to protect the public.

A Novel Employment for Old Car Trucks and Wheels.—During the recent heavy rain storms, the Los Angeles river in Southern California, became so swollen that it started to cut off the neck of the land on which was located extensive railroad yards of the Southern Pacific. As the danger became more threatening, the roadmaster ordered an enormous quantity of old car trucks and wheels to be thrown over the embankment. In this manner a solid retaining wall was formed which checked the disastrous efforts of the river and resulted in saving a vast amount of property. It is likely that never before has "cast off" material of this character been used for so novel a purpose.

Old Car Trucks and Wheels Which Were Successfully Employed to Save the Southern Pacific from the Devastating Effect of Flood Conditions.

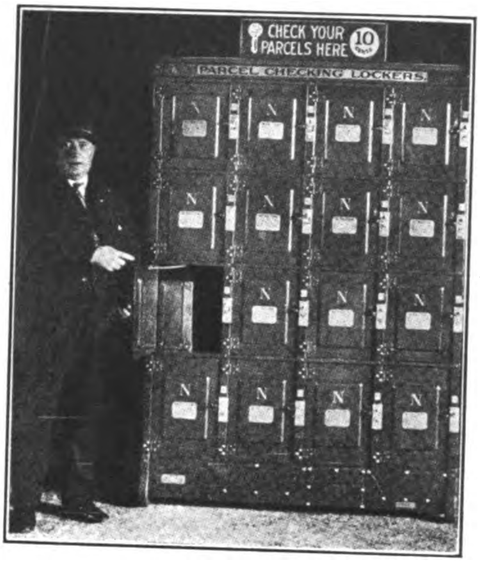
The Proposed Aeroplane Race Around the World.

RAPID progress is being made in the organization of the Panama-Pacific Aerial Race around the world, which will start in May, 1915, from the Panama-Pacific International Exposition. Present indications are that there will be about fifty entries, representing fifteen different nations. There will be two control points in the United States besides the start and finish on the exposition grounds. In all, there will be twenty-one control points, circling the globe at intervals of 1,000 miles.

Mechanical

An Automatic Coin Control Parcel Checking Locker.

THE accompanying photograph presents an excellent idea of an automatic coin control parcel checking locker, which has recently been installed by the Chicago and North Western Railway in the waiting rooms of a number of its important stations. These steel cabinets are of various sizes and the device is sanitary and convenient, enabling passengers to check their own baggage and take it out of the locker without a moment's delay. Preliminary tests of the use of the cabinets indicate that they are liberally patronized. The principal benefits offered by the new system are instantaneous service and absolute safety.



THE CHICAGO AND NORTH WESTERN'S NEW AUTOMATIC COIN CONTROL PARCEL CHECKING LOCKER.

Arc Welding.

THE subject of arc welding is receiving a great deal of consideration at the present time by railways and industrial concerns because of the many advantages it possesses for certain kinds of work.

Arc welding is particularly adapted to various uses in machine shops and foundries. Worn parts of machines can be built up prior to machining. Broken parts of steel castings can be welded together. Often defects develop in new castings, after considerable machining has been done. The machining and castings, in many cases, can be saved by repairing with the electric arc. Castings with blow-holes and sand holes can often be very quickly repaired. Risers and sinkheads can be cut off.

In steam locomotive shops metal pencil welding is used extensively in fire box and boiler repairs, flue welding, repairing steel locomotive frames, building up mud rings and general work of this character. A large amount of equipment that would have to be scrapped can thus be repaired with the electric arc, and a large saving in money, time and labor effected.

In electric railway shops arc welding can be used to special advantage in repairing broken armature shafts, axle brackets and motor frames. In track equipment, the repair of broken frogs, cross-overs and other work of this nature can be done with excellent results.

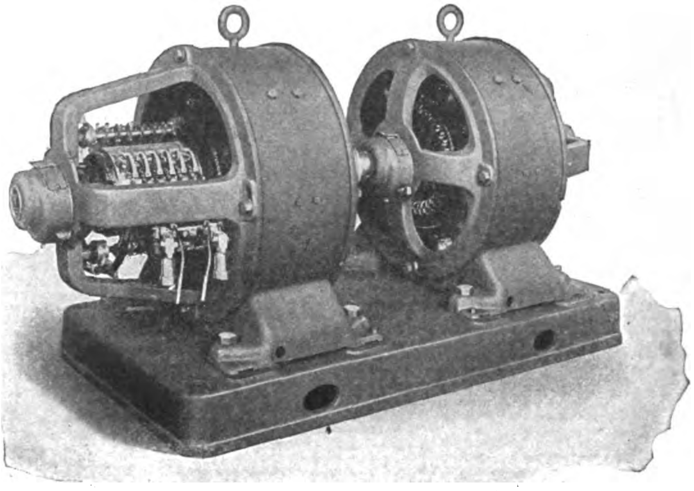
In steel mills, there are many places where the electric arc can be used to great advantage, often resulting in a considerable saving. The ends of wobblers and pinions, which have become badly worn, can be built up to their original size. Tap holes in blast furnaces can be burnt out in a very short time.

Realizing from past experience, the practical value of the electric arc for general welding purposes, the Westinghouse Electric & Manufacturing Company has developed a standard line of electric arc welding equipments.

The equipments comprise standard apparatus. They are simple in construction and easy to operate. Complicated relay schemes for automatically inserting resistances are eliminated. Ample protection is secured by circuit-breakers and special arrangement of the resistance.

The outfits are furnished complete in the four

VIEW OF OPERATOR MAKING A WELD ON A STEEL RING.



Motor Generator Set for Arc Welding.

following sizes: 200, 300, 500 and 800 amperes.

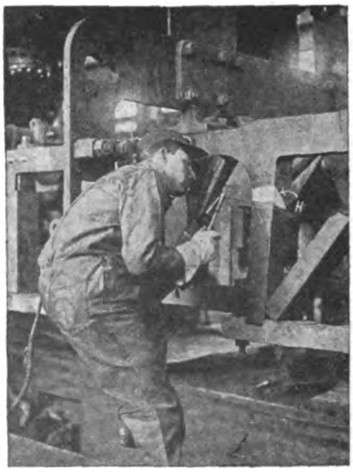
Each equipment includes a welding generator, or a welding motor-generator set, switchboard, control and all necessary accessories.

The welding generator consists of a special 75-volt, commutating-pole, direct-current machine either belt or motor-driven.

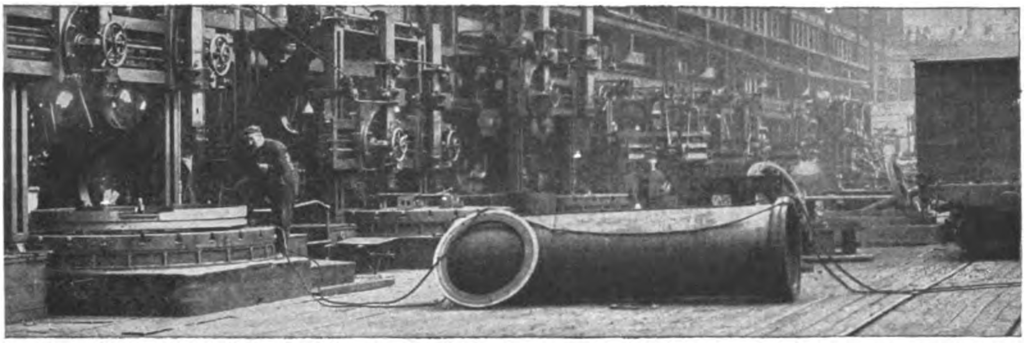
The instrument and control panels are composed of two sections. The upper section contains the indicating instruments, protective apparatus and switches arranged for regulating the welding current, and the lower section contains the starting and protective equipment for the motor-generator set. It is often desired to have several welding circuits connected to one generator. For this arrangement a control panel is provided for each circuit. Each panel can be located at the most desirable place. Metal or carbon pencil welding can be done from any of these panels, independent of all others, and one or more arcs can be operated simultaneously.

Arc Weld on Back Flue Sheet of Steam Locomotive.

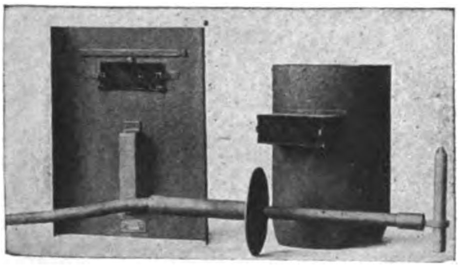
Surface Built up on Truck Spider.



Repairing Broken Locomotive Frame.



Repairing Work on a Machine Tube.



Shield, Hood and Carbon Holder.

The accessories furnished consist of a carbon holder and a hood for protecting the operator, together with a shield and a metal pencil holder for each welding circuit.

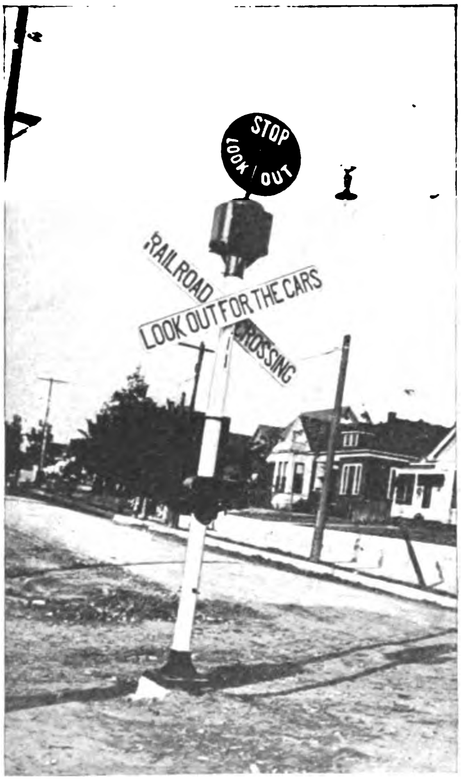
The equipment described above is the result of eight years' experience in its own shops by the Westinghouse Electric & Mfg. Company and has been employed on all classes of commercial work, thus ensuring a thoroughly practical shop outfit.

An Automatic Flagman.

ACCIDENTS to automobiles and other vehicles continue to be numerous and the conclusion has about been reached by many operating officials that the "Stop, Look and Listen" sign employed at grade crossings often fails to supply the necessary warning, particularly with regard to motorists who, swinging along at the rate of from forty to sixty miles an hour are likely to take a chance when there is no more indication of a possible approaching train, than the general warning presented on the sign.

In order to lessen the danger at these points there has been put in service on some roads what is termed an "automatic flagman," which is a device to protect railway grade crossings by giving effective warning of the approach of trains. There are several such devices on the market, but the one described herein, manufactured by the Automatic Flagman Company at Los Angeles, Cal., appears to have gone a step further than any of those previously employed which, as a rule, simply consist of a gong which automatically rings at the approach of a train. The Los Angeles device, however, not only rings a loud gong, but waves a bright red disc by day and a red lamp by night, so that such a warning can hardly escape notice.

As shown by the illustrations this device consists of a weather proof case containing the operating mechanism and the signal disc upon which are mounted standard ruby-red switch lenses with an incandescent lamp between. En-



A Device Known as an "Automatic Flagman" Which Is Being Successfully Employed in Developing Greater Safety at Railway Crossings.

ergy is supplied by a small Westinghouse Electric motor which operates the mechanism that rings the gong and waves the disk.

The motor receives its energy from storage batteries, lighting circuits, or trolley circuits, depending on the character of the installation. On steam roads, the track is insulated and bonded for the desired distance away from the signal and is charged with current from a small battery. The train on entering this block completes the circuit and operates a relay, which connects the motor with the power circuit. When the train leaves the block the circuit is opened and the motor disconnected.

On electric roads the motor is connected to the trolley circuit by a contactor which is mounted on the trolley wire or third rail and is operated by the car as it passes, a second contactor series disconnects the motor when the car passes the signal.

The illustrations show an installation of the Pacific Electric Railway Company, of Los Angeles, Cal., where the Beach Line crosses a road entering Rosedale Cemetery.

This machine, which is one of several hundred "Automatic Flagmen" on the lines of the Pacific Electric Company, operates about 300 times a day with an average duration of about one and one-half minutes each.

Lehigh Valley Develops Device for Employment of Red Lights at Grade Crossings.

A MERE piece of red glass has made it possible to use red lights on railroad crossing gates, and add greatly to the safety of motorists and other drivers at grade crossings. This has never been possible before for fear of confusing engineers on passing trains, but a simple device worked out in the signal department of the Lehigh Valley Railroad has made feasible the adopting of red lights at every grade crossing in the country. It has always been tried out at the busy Wyandotte Street crossing in Bethlehem and has proved a success.

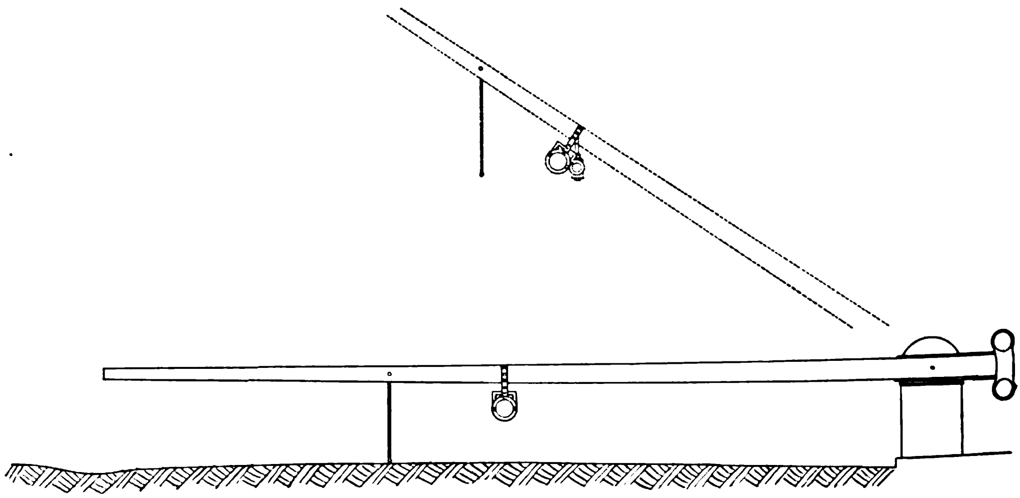
The ordinary crossing gate has a white light hung to the bar, which at night indicates by its position alone whether the track is clear. But by this device a piece of red glass set in a roundel, as in a frame, is fastened to the bar so that the white light swings behind it and shows red when the gate is down.

When the gate is up, as the roundel is stationary and the light swings, the light comes out from behind the red glass and shows white again. At no time is the red light visible from the track and traffic on the railroad is not interfered with, but the safety of motorists and the drivers of other vehicles is increased.

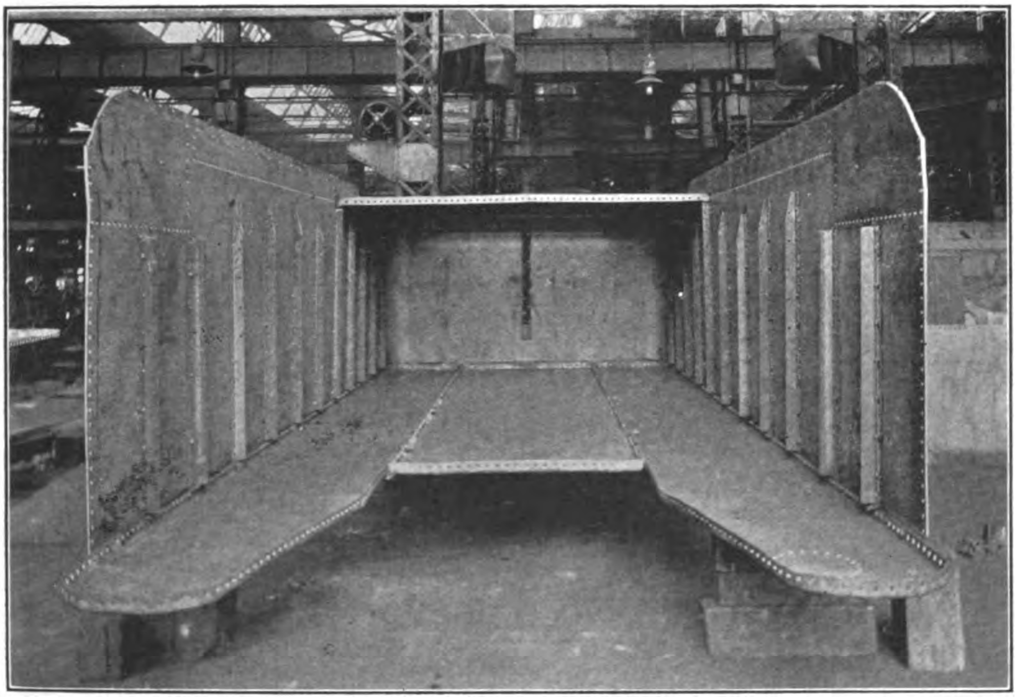
Improvement in Tender Tanks.

F. N. HIBBITS, superintendent of motive power of the Lehigh Valley Railroad, has by the simple expedient of bending a piece of steel, solved one of the most annoying of the smaller difficulties of railroading. In other words, he has invented a tender tank that does not leak. The old type of tank was always springing a leak in the bottom through a rivet hole or where an angle-iron at a corner became loosened, but in Mr. Hibbit's style of tank flanges are used, these have proved stronger and easier to repair and have now become standard on the Lehigh Valley. The accompanying illustration gives an excellent idea of the method by which this tank is constructed.

As indicated, the angle irons which join the side sheets with the top and bottom sheets, are eliminated. This is accomplished by flanging the top and bottom sheets, thus eliminating approximately 2,200 rivets and also eliminating all holes in the bottom of the tank. The top consists of one flanged pan and the bottom consists of three flanged pans, two side pans and one center pan. It is reported that the first cost of tanks of this construction, is less than for ordinary tanks, and that the cost of maintenance is also less, as all leaks can be repaired at any time without removing the tank from the tender frame.



METHOD SUCCESSFULLY ADOPTED BY THE LEHIGH VALLEY IN EMPLOYING RED LIGHTS AS DANGER SIGNALS AT GRADE CROSSINGS.



New Flange Type of Tender Construction Which Has Been Successfully Developed by the Lehigh Valley Railroad.

A Universal Blow Torch.

A NEW gasoline blow torch has recently been placed on the market by the Westinghouse Electric & Mfg. Company, East Pittsburgh, Pa., which embodies a number of novel features and improvements. These improvements, it is claimed, adapt the torch for all conditions of service and it is therefore called a Universal Blow Torch. An illustration of the torch and a cross sectional view of same are shown in the accompanying illustration.

The burner is made particularly heavy so that it will retain its heat and keep the torch burning in cold or windy weather. The drip cup is made especially deep so that it will start the torch under bad weather conditions. These features, however, do not detract from the use of the torch for indoor work.

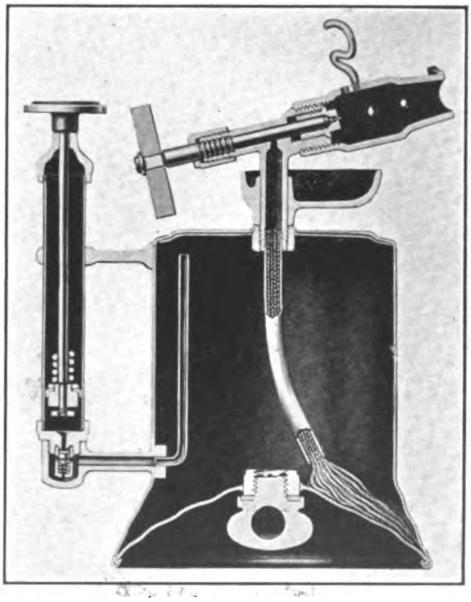
Another feature of the torch is the self-cleaning burner valve. The needle at the end of the valve stem cleans the hole automatically when the valve handle is turned. The valve seat need, therefore, never be injured by picking at the opening to clean it. The valve seat is a separate replaceable plug.

The handle of the valve is of fibre. This handle does not get hot nor does it need a long valve stem for cooling as does an iron handle. On the other hand it will not crack, loosen and come off as does a wooden handle. It does not char or burn.

The tank, it is claimed, is of the heaviest gauge brass ever used for torch tanks and is reinforced with an extra corrugated brass disc covering the entire inner surface of the tank pot. This insures the tank keeping its shape under very rough handling.

The pump valve works in a cylindrical guide which assures the perfect seating of the valve. It can be taken apart and any part replaced separately.

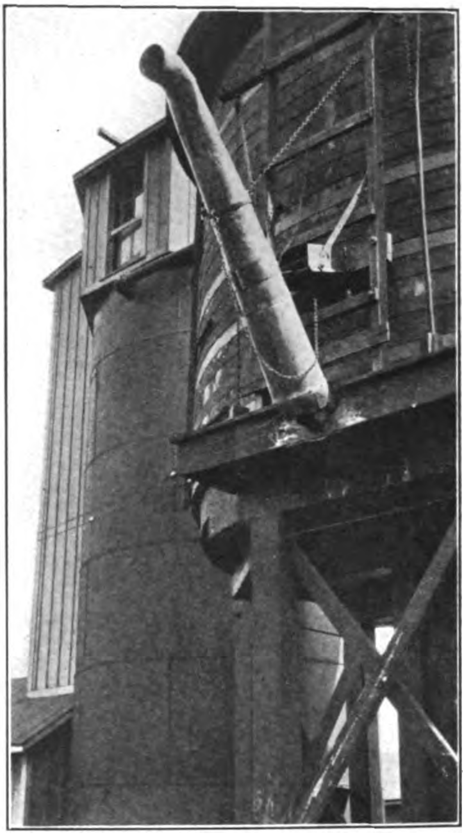
The illustrations show the quart size of torch. A pint size is also furnished which differs only in the shape and size of the tank.



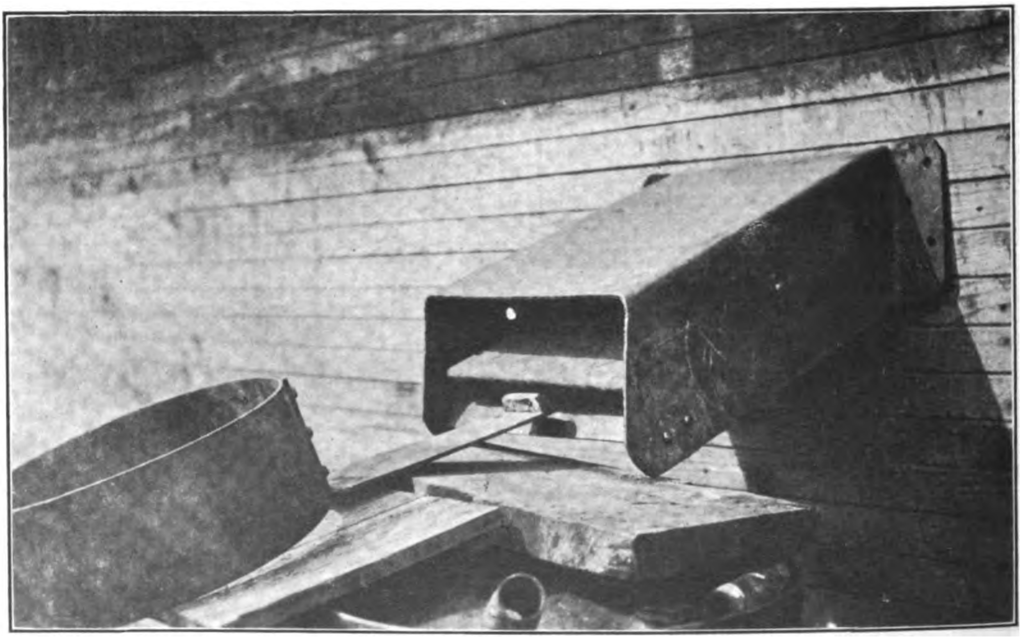
A Blow Torch of Novel Construction Manufactured by the Westinghouse Electric and Manufacturing Company.

The Jones Automatic Water Tank Spout Lock.

R. H. JONES, of Peru, Ind., has recently applied for a patent on an automatic water tank spout lock, which contains meritorious features. The device as shown in the illustration, was first constructed at the local Chesapeake and Ohio Railroad shops and applied to their Marion, Indiana, water tank in the latter part of September, 1913. It is made of 3-16-inch strap iron, though No. 8 or even lighter iron may be used, thus reducing the cost as well as the weight. The method of application of this device can be changed or altered to meet the requirements of various types of water tanks, the operating principle, however, remaining the same. When the spout is returned to rest or upright position this device not only serves to eliminate the possibility of the spout working down and dangling over the track, but there is no wind that can dislodge the spout from upright position, nor will the spout be dislodged by one or both of the weight chains breaking. Another feature of importance which the testing of this device developed is that it minimizes the wear and tear on the spout—the denting and ultimate destruction of the spout by the tendency of an engineman to huri the spout back and upright against the tank is obviated by the device acting as a sort of brake and diminishes the shock of the spout which is thrown upwards with undue force. Since the device was installed in September, all kinds of weather conditions have been experienced and the device has negotiated this period successfully and without the necessity of any time or attention being given it; the simplicity of the mechanism, the small number of parts and the strength of the device has demonstrated wonderful wearing and lasting qualities.



Showing Application of the Jones Automatic Water Tank Spout Lock.



Details of the Jones Automatic Water Tank Spout Lock.

Electrical

Electric Towing Locomotives for Panama Canal Locks.

THE first lot of electric towing locomotives for hauling vessels through the locks of the Panama Canal are now being received at the Isthmus. In all, forty of these "electric mules" are being built by the General Electric Company for this purpose. The machines weigh 82,500 lbs; measure 32 ft. 2½ in. long by 8 ft. wide by 9 ft. 3 in., the greatest height over the cabs; have an available tractive effort as high as 47,500 lbs. and a windlass rope pull of 25,000 lbs., and four of them, two on each side, will ordinarily propel steamships through the locks. Sometimes six engines will be needed to handle extra large vessels; in every case two astern, acting as a brake on the ship's movements, will give direction to her course. No vessel will be allowed to enter the locks and go through on her own power.

The locomotive is built up of cast steel side and end frames, cross ties and bedplates. It is mounted on two axles with wheels in accordance with MOB standards. The entire frame is supported from journal boxes of the regular railway type by means of coiled springs. The sides and top of the body are enclosed by sheet iron covers which fit in place and are very easily removable. At each end are enclosed cabs so that the locomotive may be operated from either end.

The locomotive is propelled by means of a rack rail while towing and while going up or down the steep grades from one level to another at a speed of two m.p.hr. While running idle or on return tracks, the speed is changed to five m.p.hr., and the machine is propelled by the regular traction method, the rack pinion being entirely released. This change is effected by manually-operated clutches located in the gear mechanism in connection with a lever in each cab similar to a steam locomotive.

The locomotive is driven by two 75 h.p. totally enclosed motors of the mill type, one being direct connected through reduction gearing to each axle. Three phase, 25 cycle, 220 volt current is used and is collected by contact plows. The motor and traction gearing is mounted on a common baseplate, which in turn is mounted on a driving axle and spring suspended to the locomotive frame the same as in regular railway practice.

In the center of the locomotive is located a vertical windlass with drum, the capacity of which is 800 ft. of one inch steel hawser cable. The windlass with its driving motors and gearing is mounted on a solid baseplate and is likewise independent of the movement of the locomotive frame. The cable drum extends above the locomotive cover and has a floating guard placed around it to retain the cable while coiling loose.

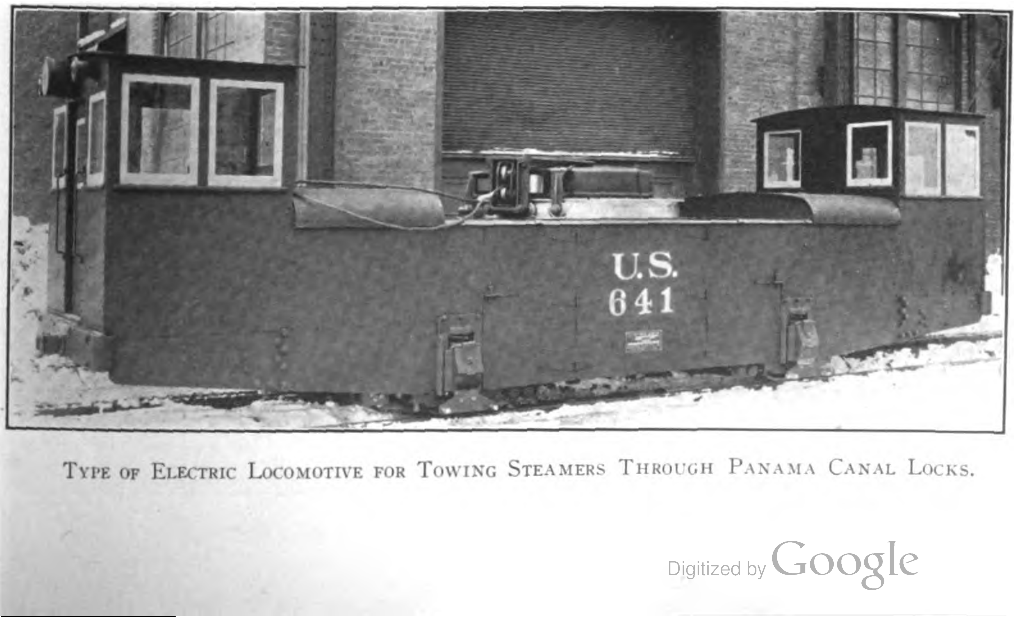
The windlass cable is handled by two 20 h. p. motors, also totally enclosed and of the mill type. One is geared for a rope speed of 12 ft. per minute at a pull up to 25,000 lbs. at two ft. radius, and its function is to adjust the position of the ship for anchor or while being towed through the locks. The other motor is geared for a rope speed of 200 feet per minute at two ft. radius and its duty is to take up slack or pay out cable or wind in any part of the entire length of cable as may be required. The cable drum is driven through a friction device which can be set at any desired value from zero up to the full capacity of the motor.

The traction motors as well as the windlass motors are controlled from either cab. In other words, the control equipment is duplicated. The two traction motors are operated by one master controller and contractors forward and reverse; while the windlass motors are operated by a reversible drum controller, and the clutch on the main vertical shaft by a solenoid. Later, we will be able to give a more detailed description of the mechanical and electrical construction and performance of those machines.

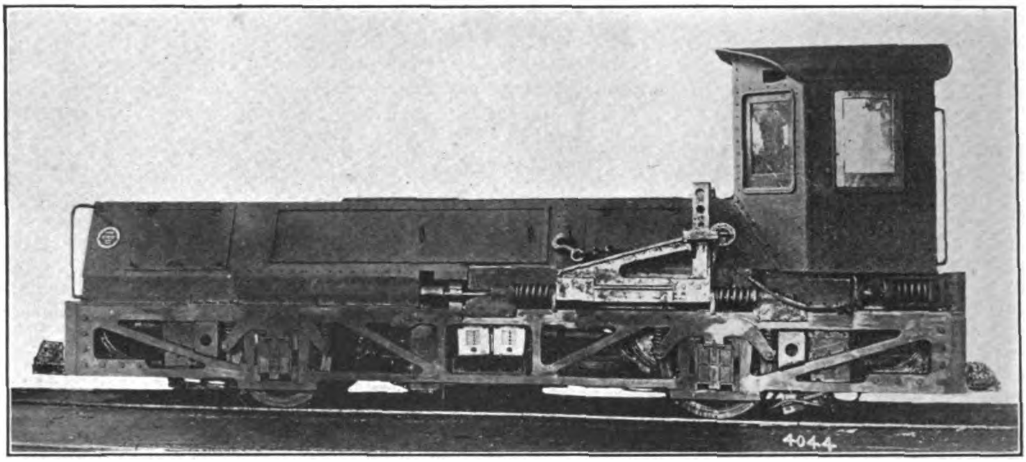
An Interesting Electric Locomotive.

FOR handling cars at their Cleveland ore docks, the Pennsylvania Lines West have recently had built three locomotives of unusual design.

The most novel feature in these locomotives is that they do not run on the same tracks as the cars they handle but on narrow gauge (42-



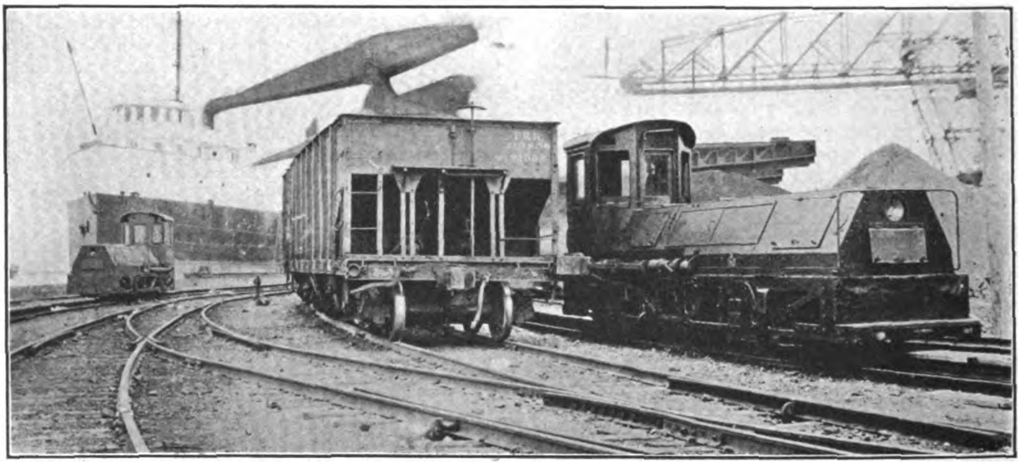
TYPE OF ELECTRIC LOCOMOTIVE FOR TOWING STEAMERS THROUGH PANAMA CANAL LOCKS.



Electric Locomotive Used on Pennsylvania Railroad's Ore Docks at Cleveland.

inch) parallel tracks. They are not attached to the cars by couplings but each locomotive is equipped with an arm on each side which can be lowered by means of compressed air controlled from the cab and acts as a pusher, as shown in the illustration. Single cars or trains can be easily handled and cars can be shifted and cut out from trains with the least time and trouble.

The locomotives are of Baldwin-Westinghouse make and are 25 tons in weight. They have bar steel frames, which give great strength but permit ready access to the interior. The motors are of the Westinghouse Electric commutating-pole type. Power is obtained from two rails lying inside the rails on which the locomotives operate; these rails are protected by a wood covering.



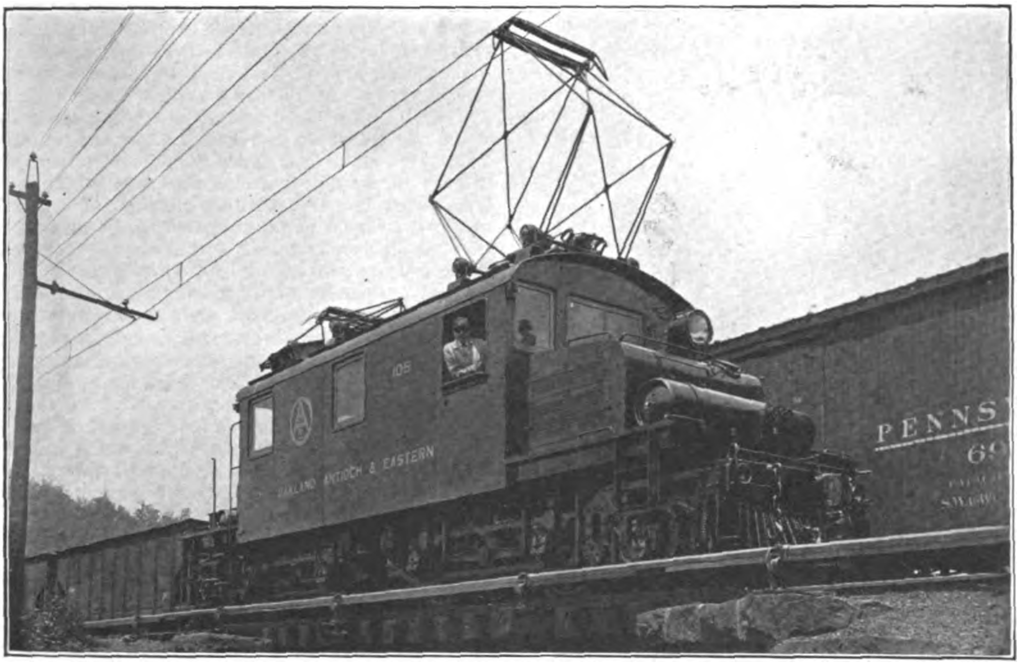
Showing Method of Coupling Electric Locomotive to Freight Car.

High Speed Electric Passenger Locomotive

BUSINESS has increased so rapidly since the opening of the Oakland, Antioch & Eastern Railway that in order to cope with the heavy through passenger traffic between San Francisco and Sacramento, it has been necessary to place in operation two 62-ton electric locomotives. The use of electric locomotives for hauling passenger trail cars instead of using multiple-unit cars is a new and noteworthy departure in the electric railway field. The phenomenal growth in traffic mentioned above is largely due to the opening up of new territory which has been heretofore practically inaccessible to the Bay Cities except by long round-about steam route.

The locomotives are of the 2-4-0 articulated truck type and each is equipped with four Westinghouse No. 308-D-7, 250 h. p. 600-1200-volt commutating pole motors and type HLF unit switch control.

Each locomotive when operating at a balancing speed of approximately 56 m.p.h. is capable of hauling a train of five steel passenger trail cars,



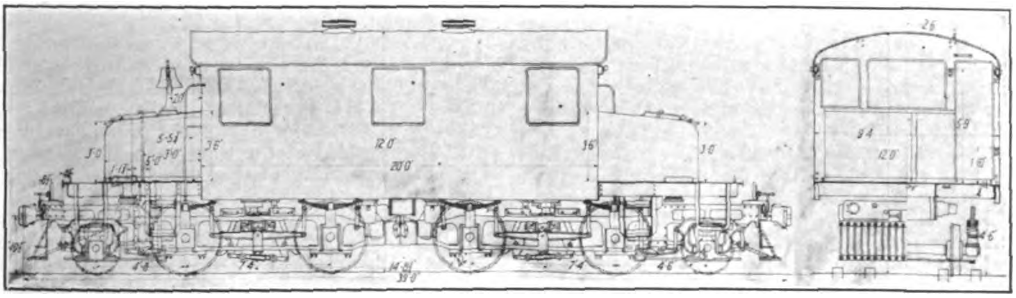
SIXTY-TWO-TON ELECTRIC LOCOMOTIVE OF THE OAKLAND, ANTIOCH AND EASTERN RAILWAY.

weighing 37.5 tons each, on a level tangent track with 1100 volts direct current on the trolley. With only three of these cars, one of these locomotives under the same track conditions is able to attain a balancing speed of about 60 m.p.h.

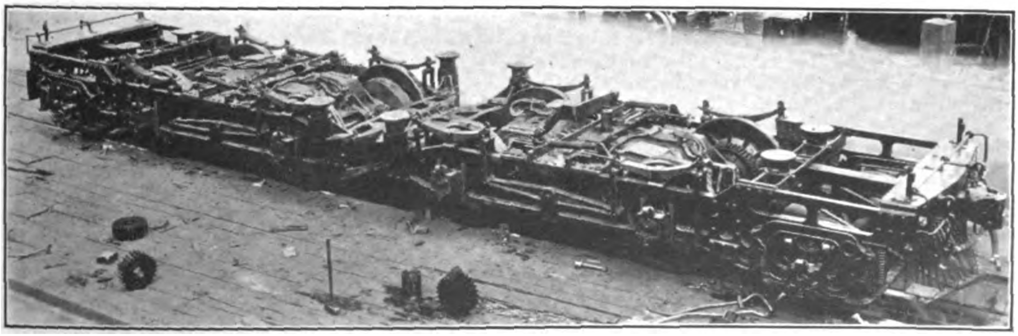
The mechanical parts were built by the Baldwin Locomotive Works, Philadelphia, Pa.

There are two articulated trucks each having six wheels, four of which are drivers, making a total of eight drivers per locomotive. Each group of wheels consisting of two pairs of driving wheels and one two-wheeled radial truck has an independent frame. These two truck frames are connected together with an articulation link. The cab is mounted on a separate frame which is supported on the truck frames by eight spring loaded friction plates, no draw bar pull being transmitted through the cab. The cab center pins carry no weight and are used simply to maintain the position of the cab with respect to the trucks.

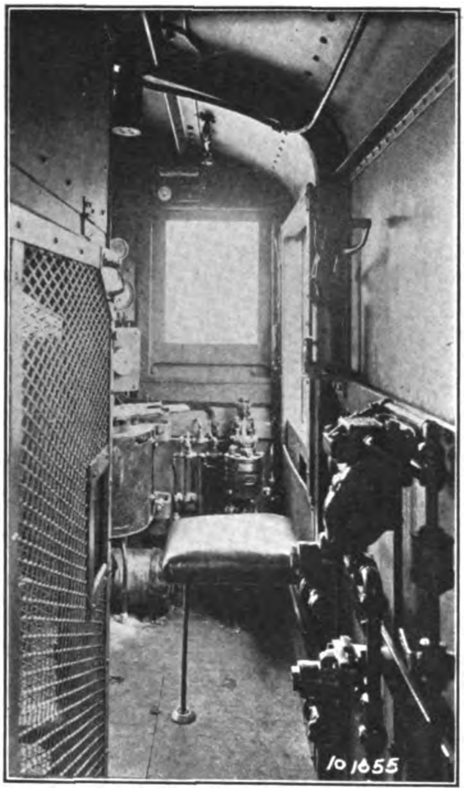
The truck side frames are steel castings of the



ELEVATION OUTLINE OF THE OAKLAND, ANTIOCH AND EASTERN RAILWAY ELECTRIC LOCOMOTIVE.



LOCOMOTIVE RUNNING GEAR SHOWING MOTORS MOUNTED.



Interior of Locomotive Showing Expanded Metal Cage Surrounding Control Apparatus, Also Operating Equipment.

steam locomotive type, 3½ inches wide, with their centers 76 inches apart transversely. These frames have renewable wearing gibs on the pedestals, and are designed in accordance with steam locomotive practice, except that in the present instance, it is unnecessary to use a tempered pedestal and wedge. The two-wheeled trucks under the ends of the locomotive are of the modified Rushton type with radius bars, and are equalized with the driven wheels. In each group of wheels, the equalization is continuous on both sides of the locomotive.

The truck frames are strongly braced transversely at each end, and also at two intermediate points. The crossties at the inner ends of the frames have radial faces which bear against each other. These crossties are provided with spring buffers placed 38 inches apart.

In negotiating curves, the inside buffers are compressed, thus tending to restore the alignment of the frames after the curve has been transversed. These buffers, being in contact at all times, also help to promote steady riding when passing over rough tracks.

The cab underframe is a built-up structure composed of channels, plates and angles. The longitudinal sills are four in number and they consist of eight-inch channels which have a length of 33 feet, 11¼ inches. The width over the outside channels is 8 feet, 10 inches. This structure is spring supported at eight points, four on each truck frame. The end supports are 37 inches apart transversely and the center supports are 90 inches apart. Longitudinally these center supports are placed close together as they are mounted near the ends of their respective truck frames. With this arrangement a minimum amount of shock is transmitted to the cab frame when the locomotive is running, and at the same time the trucks are maintained level under conditions of weight transfer due to the high tractive effort exerted by the motors. The center pins which hold the cab frame in alignment with the trucks are 14 feet 8½ inches apart. One of these pins is allowed a limited amount of longitudinal movement in the center plate on the cab-frame. This is in order to compensate for the varying distance between truck centers when the locomotive is traversing curves, and to relieve the cab frame from buffing shocks.

The cab is of steel plate with a hard wood floor. It is arranged for double end operation and is provided with a convenient arrangement of doors and windows. These are of such size that all the cab equipment can be removed through them. All walking platforms outside the cab are of rolled steel checker plate, and the arrangement of steps and handholds conforms to the requirements of the Interstate Commerce Commission.

These locomotives are equipped with head lights, pilots, and automatic couplers at each end. The couplers have radial draw-bars, which are provided with centering springs. This is an important feature, as in service these locomotives traverse curves of 100-feet radius.

The principal dimensions of these locomotives are as follows:

Gauge, 4 feet, 8½ inches.
Wheel base, rigid, 7 feet, 4 inches.
Wheel base, total, 31 feet.
Driving wheels, diam. outside, 42 inches.
Driving wheels, diam. center, 37 inches.
Driving journals, 5 inches x 9 inches.
Truck wheels, diameter, 30 inches.
Truck journals, 4½ inches x 8 inches.
Width overall, 10 feet.
Height on top of cab, 12 feet.
Length center to center of coupler knuckles, 39 feet.
Weight on driving wheels, 86,000 lbs.
Weight, total engine, 124,000 lbs.

The control for the traction motors is of the Westinghouse Unit Switch Field Type, similar to the Type HL except that the field control takes care of the extra field tap of the motors. With this type of control the time of acceleration during which running on resistance is necessary is considerably reduced.

The control equipment is mounted in a grounded expanded metal cage which protects the apparatus and yet allows it to be accessible for maintenance and inspection thus greatly assisting to insure reliable operation and continuity of service. These locomotives are designed for double-end operation.

Tenth Annual Electrical Night of the New York Railway Club.

THE meeting of the New York Railway Club on the evening of March 30th, constituted the Tenth Annual Electrical Night held by this organization. Addresses were made by eminent authorities in the electrical field, dealing largely with the progress being made in the electrification of steam roads.

Mr. William McClellan asserted that the past year has been a progressive one in electrification. He spoke of the plans of the Pennsylvania Railroad around Philadelphia, of those of the Norfolk and Western, of the Chicago, Milwaukee and St. Paul, and of the further extensions of the New York Central and the New Haven. From the standpoint of equipment, he considered the Norfolk and Western's electrification the most interesting, although the St. Paul marks the greatest advance on account of its length. He pointed to the fact that it is really the first long trunk electrification not demanded absolutely by grades, tunnels, terminals or some other special cause.

It was pointed out that the reason why there was no more to report, was not the fault of the electrical engineers, but of the uncertainty in the railway situation which has resulted in almost prohibitive figures being put upon the cost of new capital. Under such circumstances, railroads do not venture into new fields, unless driven by force. Electrified railroading usually means new capital and worse than all, new interest and amortization burdens. Inasmuch as there is ample proof that the most expensive thing in railroading to-day is capital, Mr. McClellan pointed out that the railroads must be content to use as little as possible until the world stops marking time.

Undoubtedly the most important address of the evening was that delivered by Mr. E. Huber-Stockar, of Zurich, Switzerland, consulting engineer of the Swiss Government, in direct charge of the electrification of the St. Gothard Tunnel, which is understood to be only the first step in the general electrification of all steam railroads in Switzerland. Mr. Huber was introduced by Mr. C. O. Mailloux, president of the American Institute of Electrical Engineers, who paid a glowing tribute to his ability and personality.

Mr. Huber, in addressing the members of the Club restricted himself to discussion of such railways on which steam locomotives have been used before or could be used. Under the conditions existing in Switzerland, such railways are generally standard gauge. He included, however, in the group, one narrow gauge line which he classed as main line, as per the accompanying table. To quote from his address:

"Of the total mileage of 319 km. of railroads electrically operated, around 210 km. are single phase and of these about 166 km. are operated with single phase alternating current of a low frequency for railway service, fifteen cycles per second.

"For some time the Government Committee has been at work in Switzerland investigation in the question of electrifying the railways of Switzerland generally and particularly certain main lines. This Committee was formed under the auspices of the Society of the Electricians of Switzerland; it was incorporated as a society called 'The Schweizerische Studiencommission fur electrischen Bahnbetrieb.' The Federal Government and the State railways were represented by membership on the committee; there were also representatives of the manufacturers and power companies. The committee was not a governmental one nor was it formed for the express purpose of reporting to the government. The committee have published reports from time to time giving the results of their investigations; at present they have in preparation a final comprehensive report upon the whole subject, which, it is hoped, will be published before long.

"In May, 1912, the committee reported, but not in a mandatory way, to the Board of General Managers to the Federal or State railways of Switzerland in regard to the practicability of electrifying the St. Gothard line, and recommended the adoption of the single phase system, more particularly single phase current of fifteen cycles directly generated by hydraulic power, with a voltage of 15,000 volts, possibly of 10,000 volts. The report showed a considerable saving to be realized by electrification assuming a tonnage which may certainly be expected at the time when the electrification is completed.

It seems that this report of the committee, by the way, no more recent at all, has been considered in this country as the report of a governmental committee to the Government of Switzerland. I would emphasize that this is not the case; though, the Federal Government and the State railways assisted it financially a great deal.

"The railroads in Switzerland are partly owned by private companies and partly by the State, more correctly by the Federation of Switzerland. There are approximately 3400 km. of normal gauge railways, of which about 2800 km. belongs to the Federation. There are about 1200 km. of narrow gauge railways, of which only about 60 km. are Federal. Besides these there are about 100 km. of track railways, about 450 km. of street railways and about 35 km. of rope railways.

"The Federal railways studied the problem of their electrification more or less independently of The Schweizerische Studiencommission fur electrischen Bahnbetrieb. They purchased water power rights and proceeded to prepare for the electrification of a section of the St. Gothard line. This line has long, heavy grades, an unusual percentage of tunnels, and a well established traffic, both passenger and freight, all of which tends to make electrification of that line a remunerative proposition. However, it must not be understood that the saving in operating expenses is the principal object of electrifying Swiss steam railways, at least not yet; because steam operation has not yet reached the limits of its capacity under present traffic conditions. Still, Switzerland is probably more nearly approaching a general electrification than most other countries, because the substitution of electricity for steam is a matter of general public interest in a country which has no fuel supply of its own, but an abundance of water power. Therefore, in the case of the St. Gothard line, where the capacity of the present steam operation is far from being exhausted, it unquestionably seemed preferable to begin electrification, rather than to spend money on extensive steam improvements, which are of vast importance, involving the reinforcement of almost all the bridges.

"The objects of the electrifications of the St. Gothard line in Switzerland are as follows: First, the speeds on the heavy grades can be increased so as to increase the traffic capacity to a much greater extent than would presumably be possible with steam. Second, the handling of trains by electric locomotives will simplify the handling of traffic causing a reduction in locomotive kilometers in relation to the number of ton kilometers. The assist engine on express and freight trains will be dispensed with. Third, the elimination of the smoke in the numerous long tunnels will improve the conditions under which train crews and trackmen work, and will doubtless reduce the cost of track maintenance in the tunnels.

"The following recommendations of the Board of General Managers of the Federal railways were adopted by the Board of Directors on November 30th, last year: First, the project of the electrification of the section Erstfeld Bellinzona, a portion of 110 km. double track line of the line between Luzerne and Chiasso (225 km.) is adopted and the sum of thirty-eight and a half million francs provided for the construction of power plants, electric track equipment, transmission lines, repair shops and their equipment. Second, the Board of General Managers are authorized to make such alterations on the project as may be necessary before or during the carrying out of the details of the work, provided that they do not thereby increase the expense appreciably."

Mr. George Gibbs followed Mr. Huber with an interesting and general account of the two important heavy traction installations under construction in this country, namely, those of the Pennsylvania Lines at Philadelphia and the heavy grade electrification of the Norfolk and Western at Bluefield, W. Va. Mr. Gibbs spoke in part as follows:

"I will take the case of the Norfolk and Western first. It is, perhaps, the heaviest electric traction scheme proposed anywhere in the world, as yet. The coal traffic of this railway is the important one, and originates in the Flat Top and Pocahontas fields, which lie on the west slope of the Allegheny mountains. There is a large coal movement to the west, but the most important coal traffic is easterly to tide-water; this has to be taken up the western slope of the Allegheny Mountains; it is this section of the road we are electrifying. That is the section between Bluefield on the east and Eckman on the west end, a distance of about thirty miles, or about ninety track miles. Within this distance and practically at the summit of the Alleghenies, is the Elkhorn tunnel, about 4,000 feet long; it is a single track tunnel, and constitutes "the neck of the bottle," limiting the capacity of the entire road. The alternatives for electrification to relieve congestion were either to double track the tunnel or to build a relief line, both of which would cost a great deal of money and require years of time.

"It is found that electrification of the existing tracks would not only give the desired increase in capacity of their line, but would give it promptly and would afford savings in operating costs which would carry the interest and depreciation charges on its cost and leave a handsome surplus besides. The maximum eastbound tonnage at present is about 65,000 tons per day up the grade, of which about 48,000 tons is revenue traffic—the tonnage, by the way, is exclusive of the ordinary tonnage of the road—it is simply coal tonnage that I am talking about. This tonnage is loaded in about twenty train units of 3,250 tons each, trailing load. This train is hauled up a two per cent grade over the mountain to Flat Top Yard by three mallet compound engines, thence to Bluefield, fifteen miles further over an undulating grade with 1¼ per cent maximum by two mallets. At this point trains are made up for the road run to tidewater. The entire thirty miles that we are electrifying is what we might call a 'gathering division,' the tonnage being filled out in the section from the various coal workings; it is, therefore, treated as a separate engine division, and this makes the substitution of electric for steam power unusually advantageous and economical. For these mallet engines we will substitute electric locomotives—a double electric unit at the head of the train and a similar one at the rear. The electric locomotives we have adopted are novel and will be described with some pictures, I believe, by Mr. Storer, of the Westinghouse Company. They weigh 130 tons, of which 110 tons are on the drivers and are exceptionally powerful and sturdy machines. As the road has a great amount of curvature, about forty per cent of the entire line being on curves up to twelve degrees, we feel that leading wheels would be an advantage in these locomotives and the design was adopted for this reason. The maximum drawbar pull of one of the single units, that is, one-half of the complete unit at the head of the train, is 48,000 pounds during acceleration, and about 42,000 pounds normally on the two per cent grade. We therefore, have at the head of the train about 100,000 drawbar pull during the acceleration period—about five times the amount Mr. Huber states is the limit of Swiss railways.

"The system of electric traction adopted is the single phase with an overhead trolley wire carrying 11,000 volts; on the locomotive the single phase current is converted to three phase by a 'phase-splitting' device, thus allowing three phase induction motors to be used, a type which has certain important advantages for this particular traffic. Transmission of current from the power house is 44,000 volts single phase, which is transformed in sub-stations along the line to the working pressure of 11,000 volts. The power house is a steam plant having a capacity of 27,000 kilowatts, and is located at Bluestone, about ten miles from the east end of the division. The foundations for the catenary line are in and we expect to begin the erection of steel in the next month or so, and expect to complete the whole installation by the early winter of 1914.

PENNSYLVANIA RAILROAD:

"The Pennsylvania Railroad has about reached the limit of its capacity in the Broad Street Station, Philadelphia, and the question of its enlargement has been under consideration for some time. It was found that by the electrification of the suburban service a large number of empty train and locomotive movements might be eliminated if the suburban service were electrified.

"The principal point of congestion at the terminal is at the junction of the six suburban routes in the yard outside of the headhouse. By suburban electrification it is figured that we can save from sixteen to twenty per cent of the total throat movements, and thus effect a corresponding relief during rush hours. The gain in station track capacity is not so important at the present time, as the main congestion point is in the yard, but the gain here will amount to an equivalent of about two station tracks and, of course, is not negligible. Initially we are electrifying the Broad Street—Paoli service only —twenty miles of four-track route; this will be followed, probably, by the conversion of the

Chestnut Hill line, as business conditions warrant. We do not expect to make money out of this electrification from the savings effected in operating expenses; if it carries its interest charges it is as much as we expect it to do. It is purely a case of emergency in effecting an equivalent of a considerable station enlargement.

"The electrification will be on the single phase alternating current system, with 11,000 volt trolley wires; trains will be of motor cars, each car having two 225 H. P. single phase motors on one truck. There is another interesting experiment which we are interested in carrying out. Some months ago we loaned to the Westinghouse Company a standard steel combination which they have equipped with four 225 H. P. direct current motors, a 'mercury rectifier' and alternating current control and transformer to poduce, in effect, a 1,000 H. P. A. C.—D. C. locomotive. Alternating current is taken from a 11,000 volt trolley line, passes through the transformer and control to the rectifier and appears as direct current for use in direct current motors. The car has been very thoroughly tested for some months in Pittsburgh, and has been lately sent to New York and is running, by courtesy of the New Haven Company, on their road in service tests. It is not yet open to public inspection, however. The experiment appears very promising and further widens the field of single phase traction for railroad service."

Mr. A. H. Armstrong, of the General Electric Company, spoke on the electrification of the Butte, Anaconda and Pacific, in part, as follows:

"In May, of last year, the Butte, Anaconda and Pacific began operating electrically in part, and in October practically the entire road of 114 miles of track was in operation with electric locomotives. The change from steam to electric motive power was made without mishap, and the same operating crews were retained and readily learned to handle the electric locomotives. The installation was successful from the start; in fact, so successful as to influence the management of the Chicago, Milwaukee and St. Paul Railway to adopt a similar system upon the 440 miles of projected electrification on that road.

"It is not my purpose to-night, to discuss the different systems of electrification other than to point out that the 2,400 volt direct current system now in successful operation upon the Butte, Anaconda and Pacific Railway offers a new method of electrical operation, and one possessing many qualifications for the heaviest type of main line service. The Butte, Anaconda & Pacific Railway comprises 114 miles of track and presents all the general characteristics of a main line road as regards profile and tonnage. Freight traffic consists of the movements of 5,000,000 tons of ore per year and this will be shortly increased to 7,500,000 tons besides mine supplies, miscellaneous freights, etc. Main line trains of 4,000 tons trailing load against a ruling grade of .3 per cent are hauled behind electric locomotives weighing 160 tons, all weight upon the drivers, and operating at a speed of approximately sixteen miles per hour on ruling grade. At Anaconda, trains of 1,600 tons are hauled against 1.1 per cent grade making the run up Smelter Hill in half the time previously required with steam engines. The entire road is fed from two sub-stations located at Butte and Anaconda respectively, 26 miles apart, power being furnished by the Great Falls Power Company. The entire installation is a successful example of the ease with which a road may be changed from steam to electric operation with a system well adapted to fit with coal requirements of operation as well as power supply. The fluctuating load of this road is fed from the general distribution system of the Great Falls Power Company without in any way interfering with its regular service, a considerable part of which consists of lighting load.

"Aside from the interest attaching to the success of this latest example of electrification, the equipment used is of special interest as demonstrating beyond question that high voltage direct current locomotives can successfully handle the heaviest traffic and receive power from existing distribution systems without in any way imposing on such systems any handicap of special apparatus or interference with regular service. This is all due to the great improvement made in the direct current motor with the introduction of the commutating pole which permitted the building of such motors for higher potential and made possible 2,400 volts on the trolley. After nearly one year of operation it seems fully demonstrated that the direct current motor at high voltage has lost none of the ruggedness and reliability in operation which has been its chief characteristics on our surface, elevated and subway lines."

Wheelless Electric Trains.

ENGLISH railroad experts have recently been astonished by demonstrations given in London of a new wheelless electric train invented by Emil Bachelet. With the employment of models, the inventor has demonstrated how he can send a car at a speed of 300 miles an hour through space. After twenty years' work Bachelet has perfected his invention, which is based on a new electrical principle. He discovered that the effect of a magnetic coil on aluminum and certain other metals is to repel instead of attract.

Bachelet's model car is cigar-shaped. When stationary it rests on a track below, which, at intervals of two feet, are electrical coils arranged to deliver magnetic lines of force against the resisting aluminum of the car. As soon as the electric influence is set in motion, the coils push the car away and the vehicle is raised clear of the track. The car is drawn along by pulling magnets, shaped like tunnels, at intervals of twenty-five feet. The car passes through the magnets, which are automatically energized in succession.

The models of this new train are housed in a secret room at the top of a building in London. In making a demonstration the inventor at the switchboard near a miniature track pulls a lever and the car springs forward with lightning speed. Bachelet says the operative cost of his railroad system would be infinitesimal compared with ordinary railway operation expense. His cars are without engines, wheels, bearings, armatures, commutators, and they require no oiling and little adjustment or repair. One railroad expert said the cars could be driven at a rate of 600 miles an hour, provided the power were strong enough.

Terminal Improvements

Vancouver Terminal Improvements.

THE Canadian Pacific Railway Company terminal improvements at Vancouver, B. C., are rapidly nearing completion and the subjoined plans and photographs may be of interest as giving an idea of what is intended to be done at that point and what is the present state of the work.

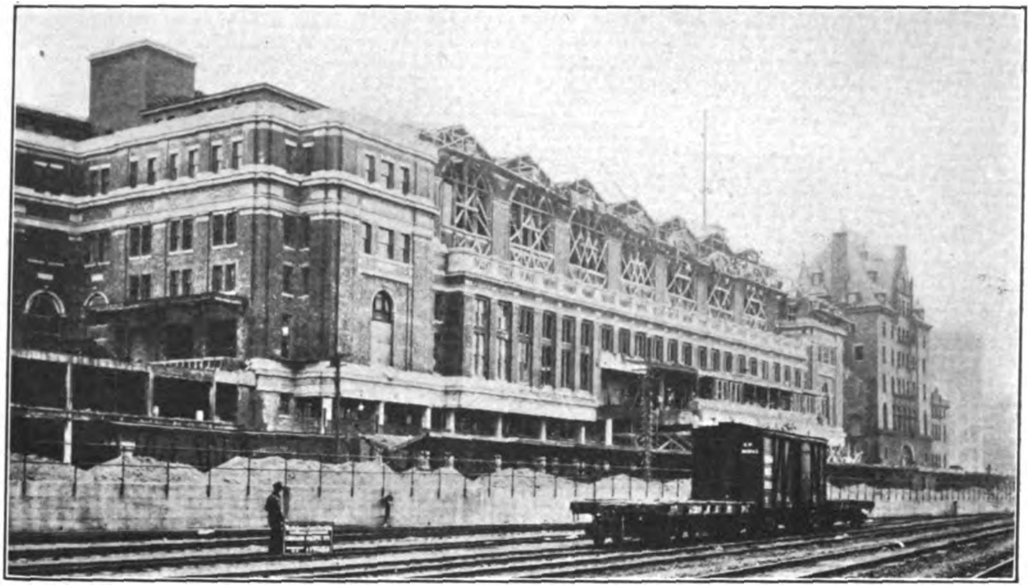
Front Elevation of the Canadian Pacific Railway's New Passenger Station at Vancouver, B. C.

It will be recalled that the general scheme embraces a passenger station and office building located on land immediately east of the present passenger station. Another dock 200 x 490 feet has been built. A particular point of interest in this work was the use of piles 135 feet long on the pier end. The main entrance to the station is located on Cordova Street with the main waiting room on the street level. Tracks are located about 25 feet below this level and there is provision for four passenger tracks separated by wide platforms. Stairways and lift connect the two levels of the station and a separate footbridge is carried over the passenger tracks and directly connected with the waiting room at one end and with the stairways leading to the track level thus giving access to the platforms without crossing the tracks at grade.

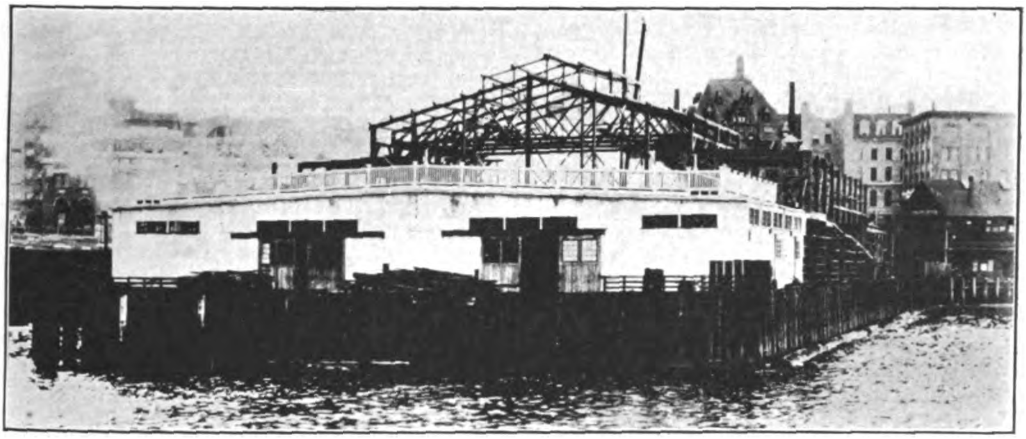
In order to avoid a grade crossing and the consequent delays to traffic between the city and the piers a steel viaduct is being built on the line of Granville and Burrard Streets passing over the tracks to the piers. An incline is also being built on the west side of the Granville Street viaduct to the wharf thus giving access to the lower deck of the pier and freight sheds and to the water front.

The passenger station is a combination stone and brick structure with a steel frame. The station is divided into two principal levels on the lower of which are the baggage, mail and express rooms while on the upper are ticket offices and waiting rooms. Above the public rooms in the station the space will be devoted to the general offices of the railroad company. The interior arrangement of the office space will be on the

Canadian Pacific's New Passenger Station at Vancouver, B. C.



ELEVATION TRACK SIDE OF CANADIAN PACIFIC'S PASSENGER STATION AT VANCOUVER, B. C.



CANADIAN PACIFIC RAILWAY'S NEW JETTY PIER "D," VANCOUVER, B. C.

unit system and each unit will have complete heating and lighting facilities with partitions that may be readily installed or removed as changes in the arrangement of office accommodation become necessary.

The principal problem was to provide easy and economic communication between the city, the railroad station and the piers, these last introducing an element which is unusual in most railroad terminals so far as passenger traffic is concerned.

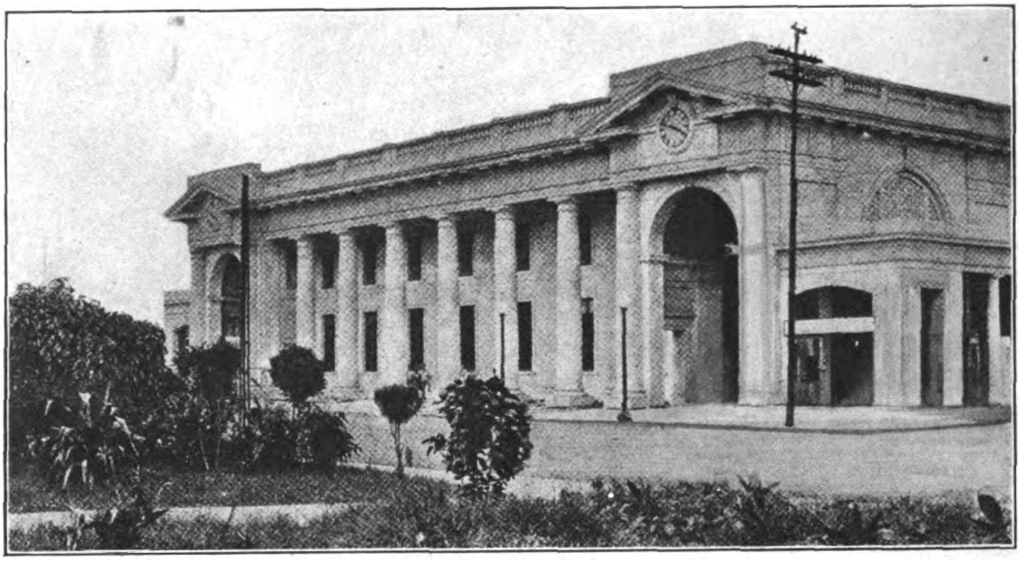
It is expected that the station will be ready for occupancy during the summer and that the steamship station facilities will be available somewhat earlier although due to the necessity of removing the old station before the viaduct can be built on the extension of Granville Street the use of the present grade crossing over the freight yard tracks will have to be maintained for a month or two longer.

Messrs. Barrott, Blackader and Webster, of Montreal, are the architects for this work. Westinghouse Church Kerr & Co., of Montreal, are the engineers for the complete design, construction and equipment of the terminal working in co-operation with the officials of the Canadian Pacific Railway.

New Station in Panama.

THE new station in Panama, which was first taken into active consideration by the Panama Railroad officials in 1912, has been completed and its general appearance is indicated by the accompanying photograph.

The station, whose main building is of two story construction, has a frontage of 167 feet with a three story wing in the rear extending back 100 feet to the alighting platform. The level of this platform and of the baggage room leading from it, is about seven feet lower than the street curb in front of the building, per-



THE PANAMA RAILROAD'S NEW PASSENGER STATION.

mitting the introduction of a messanine story in the rear wing. The ground floor of the main building is at the same level as the side walk and contains separate entrances, porte cocheres, vestibules and waiting rooms for each of the two classes of passengers. Stairs have been avoided wherever possible so that almost every portion of the building, to which the general public has access, can be reached by means of ramps having a seven per cent slope.

There is both a first and second class waiting room, the one for the first class passengers has a beamed ceiling executed in plaster and the walls decorated in plain panelling, while the second class waiting room has no relief decorations. Both the first and second classes are served by the same ticket seller and use the baggage room in common.

Climatic conditions have made it advisable to provide carriage accommodations, ample in extent and well protected from the weather. In accordance with the Panama Railroad's long established custom of providing quarters for employes, the entire second story was divided up into rooms for bachelors. Offices and a room for unclaimed baggage are placed in the mes-

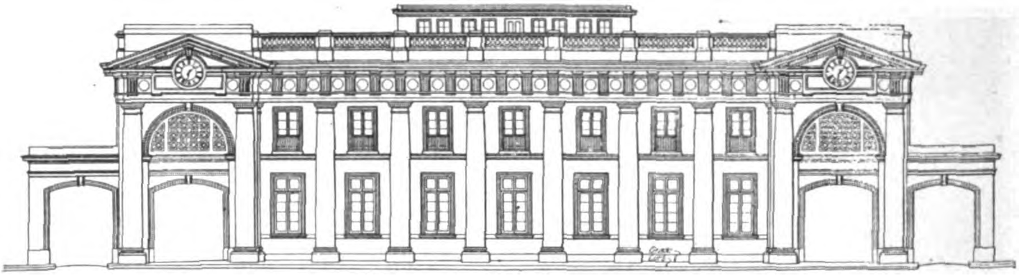


Fig. 2—West Elevation (Front) of Panama Station.

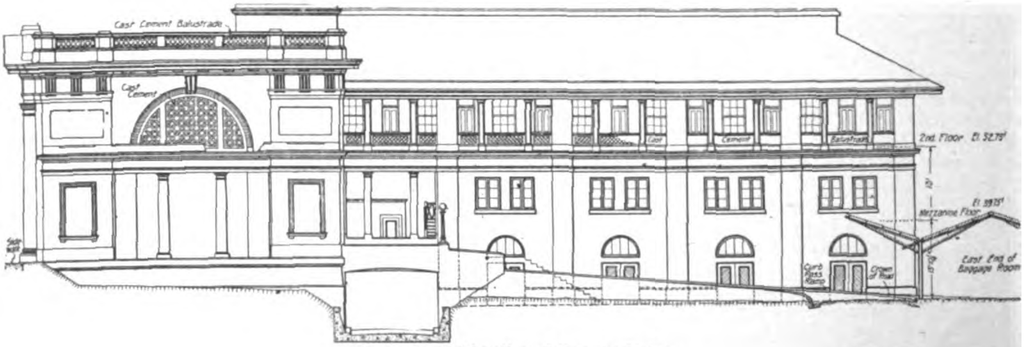

Cast Cement Balustrade
Cast Cement
Cast Cement Balustrade
2nd Floor El. 52.78'
El. 39.15'
Mezzanine Floor
Side walk
Curb Grass Ramp
Crown of Road
East End of Baggage Room

Fig. 3—South Elevation of Panama Station.

sanine story, directly above the baggage room.

The location of the baggage room was determined by the make up of the Panama Railroad trains. Irrespective of the direction in which they are going, they always have the first class coaches on the southern end of the train and the second class coaches on the northern end, and the baggage car or cars in the middle. Hence, it follows that the most logical position for the baggage room is on the axises of the building adjoining the alighting platform and at the same level.

On the north side of the baggage room, a service court four feet below the level of the alighting platform is provided for the use of mail and baggage wagons. Service roads leading to and from this court pass under the passenger and carriage ramps connecting the main building with the alighting platform, an arrangement which makes the handling of baggage absolutely independent of the movement of passengers. Certain incoming trains, have, on the rear, either an observation car, or a hospital car bringing patients to Ancon Hospital. The patients are carried across the alighting platform to an ambulance, waiting in the turn-around. When an observation car takes the place of a hospital car, the ambulance is replaced by public carriages.

The carriage and service roads in the grounds form an integral part of the plans. They are laid out with the object of preventing congestion and confusion by keeping all vehicles and pedestrians on a given road or sidewalk moving in the same direction. The baggage wagons, for example, will enter the service road from the Twenty-third Street extension, whether empty or loaded, and leave by the service road at the north end of the grounds. The "coaches" or carriages, when bringing passengers to a departing train, will enter either the first class or second class driveway, and discharge their passengers at the waiting room or continue down the carriage ramp and draw up along the alighting platform. The roof of this platform projects thirteen feet over the road, so that passengers, even during a tropical downpour, will be protected from the wet. Coaches awaiting the incoming train will line up along the alighting platform.

The entire exterior and most of the interior first floor of the main building are finished in white cement stucco, tinted with mineral colors. This gives a more pleasing texture and color than the usual painted stucco and possesses the added advantage of lowering the cost of maintenance. Iron and steel corrode so rapidly in the hot, moist atmosphere of the Isthmus that they have been used sparingly, and, whenever practicable, bronze has been substituted. Welch floor tile is used practically throughout the building for floors. The principal exceptions are the concrete floor of the baggage room and the white tile floors of the toilet rooms. The public toilets on the first floor have a five-foot wainscot of sanitary glass. What little finishing lumber was used in the first class waiting room and its dependencies, is of mahogany, a wood which is not molested by ants. Cypress, used elsewhere in the building, possesses the same quality of repelling boring insects.

The principal items of equipment are the fitting of the news stand, with its glazed wall cases, counters, etc., and the bulletin boards, two in each vestibule and one in each waiting room. Four of the six are fitted with a train annunciator device in the upper portion. There are also in each vestibule gongs, controlled from the alighting platform, which announce the departure of trains. Ice water is piped throughout the building from a central cooler located in the baggage room. A main panel board in the closet of the main stairs controls all lighting and power circuits on the grounds and building.

Six different contractors submitted bids. Of these, the Central American Construction Company, Limited, of Colon, was the lowest bidder, and, on September 10, 1912, the contract was awarded to it. The formal contract was dated three days later. For the sum of $81,688, the aforesaid company agreed to furnish necessary labor and material for the erection of the superstructure complete and for the razing of the old station. A few items were not included in the contract, but were furnished by the Panama Railroad. Under this heading come the bronze lighting fixtures, electric clocks, ticket cases, seats upholstered in cane for the first class waiting room, and wooden slat seats for the second class waiting room. All of these were designed by the architect and bought, for the most part, through the office of the General Purchasing Agent. The mahogany seat ends in the first class waiting room are made at Cristobal in the Panama Railroad carpenter shop, just before it was discontinued.

The New Union Station at Wichita.

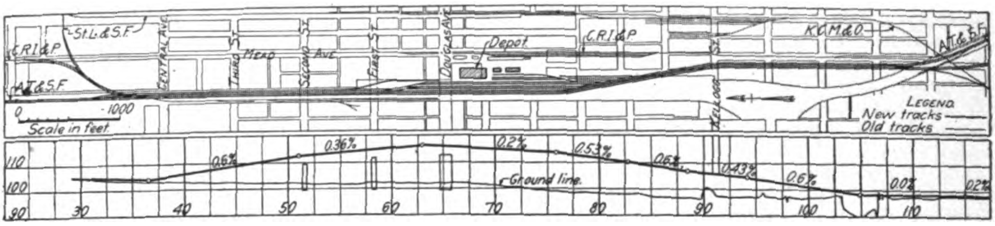
THE railways running into Wichita, Kansas, namely, the Santa Fe, Rock Island, Frisco and the Orient, have recently completed their new Union Station at that point, and, as the accompanying photograph indicates, it is a building of unusual artistic merit. The actual work of construction was performed under the direction of the Wichita Union Terminal Railway Company, which was organized by the four railroads involved. It includes, as well as a new Union Station, a system of track elevation. The total cost is estimated at approximately $2,000,000.

The main tracks of the Santa Fe, Rock Island and Frisco run through the town on parallel lines only a short distance apart, and in order to avoid a very hazardous grade crossing on the main business street, the tracks running to the new station have been elevated a distance of one and one-half miles.

The new station is 260 feet in length, by 100 feet in width. Additional buildings have also been provided for the accommodation of the various express companies and for the handling of mail.

Another photograph shows the main waiting room which is on the east side of the building, and need not be entered by passengers going to the trains unless they desire to sit down. The ticket office fronts on the concourse and grouped about the concourse, as a center, are the waiting room, dining room, news and parcel stand and the smoking room, while the telegraph office, telephone booths and baggage checking counter, are located in a passage way just south of the concourse.

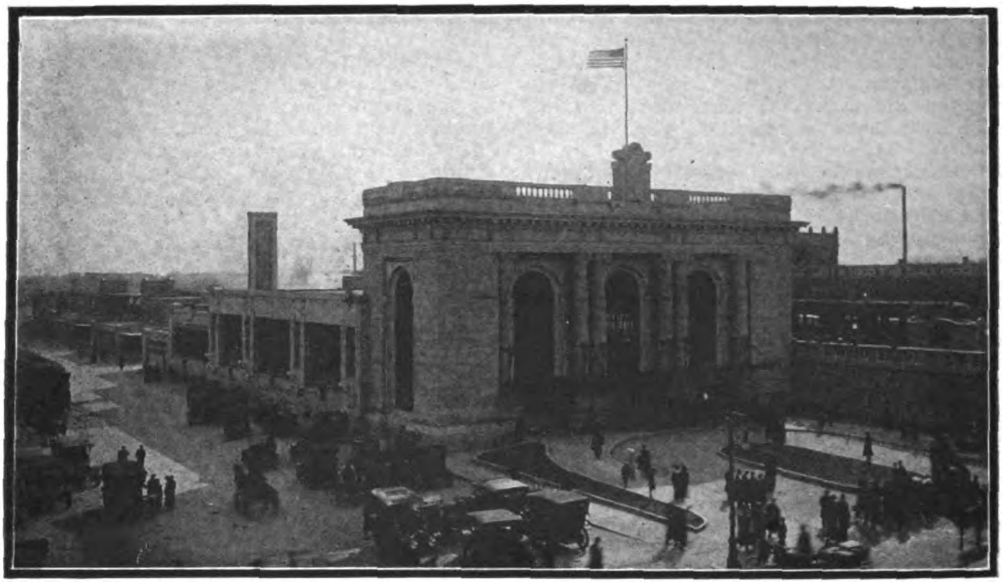
The station and express buildings are of reinforced concrete and are fireproof throughout, while the Douglas Avenue facade is of a hand-


St.L.&S.F.
C.R.I.&P.
AT&S.F.
Central Ave.
Third St.
Mead Ave.
Second St.
First St.
Douglas Ave.
Depot
C.R.I.&P.
K.C.M.&O.
AT&S.F.
Kellogg St.
0
1000
Scale in feet
Legend
New tracks
Old tracks
110
100
90
30
40
50
60
70
80
90
100
110
0.6%
0.36%
0.2%
0.53%
0.6%
0.43%
0.6%
0.0%
0.2%
Ground line

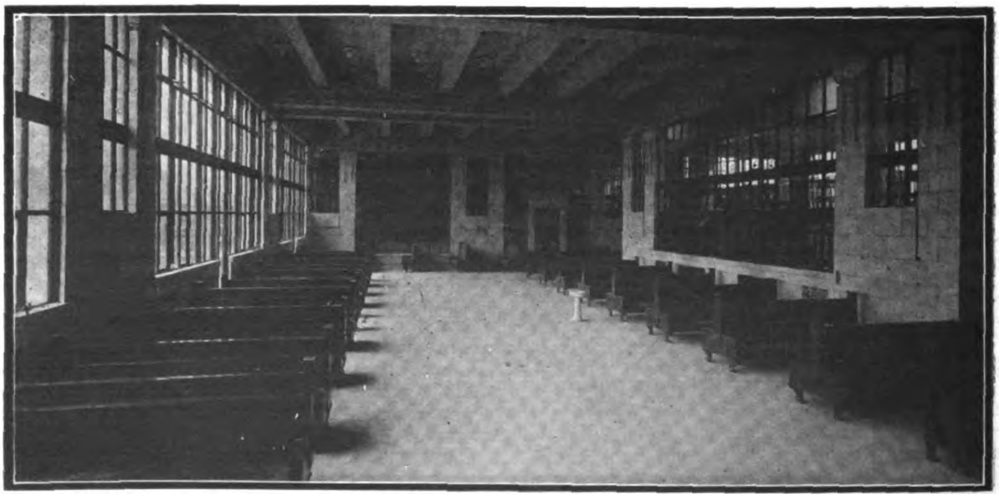
Track Plan and Profile of Wichita Track Elevation

some white stone. The east and west elevations of the station are of terra cotta, the interior being furnished with white terra cotta. The station has marble floors throughout.

The fact that the tracks are elevated, permits of the construction of spurs under them and inclines leading to each of the three platforms. This is an ideal arrangement for a through station as there is only a difference of level of ten feet between the waiting room floor and the track platform. There is a four track main line the entire length of the elevation which provides for a double freight and double passenger main. At the station, the passenger main lines spread out into five through tracks. There are also three passenger spurs, provided for branch line trains which use Wichita as a terminal. Just south of the depot there are ten tracks on the



View of the Beautiful New Union Station at Wichita.



Main Waiting Room of the Wichita Union Station.

elevation. This will take care of Wichita's business for a great many years to come.

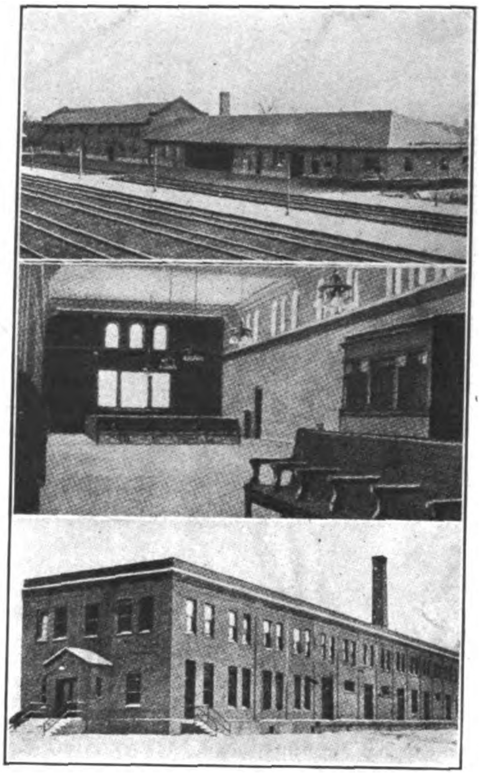
At the north end of the terminal tracks connections are made with the Santa Fe, Frisco and Rock Island, and these connections are so planned that at the point where the tracks diverge a four-track movement can be made. The same thing holds true at the connections at the south end. It will be seen by this plan that two Rock Island freight trains can meet each other at the Orient crossing at the same time that two Santa Fe passenger trains are meeting each other at the same place. Two complete electric interlocking plants are being constructed, one at each end of the elevation.

North Western's New Passenger and Freight Stations at Huron, S. D.

THE Chicago North Western has completed and opened for the use of the traveling and shipping public, large modern passenger and freight stations at Huron, S. D.

The passenger station is a most attractive structure 216 feet long by 45 feet deep. It is built of brick and has a concrete foundation and slate roof, insuring absolute protection against fire. It includes a large waiting room, dining room, lunch counter, ticket office, women's rest room, men's smoking room and the latest and most sanitary toilet conveniences. Just beyond the station building proper and connected by it with a canopy, is another fire-proof building 30 feet by 86 feet deep for the handling and storage of express and baggage. This building contains comfortable quarters for conductors and trainmen.

The new freight house is across the street from the passenger station and is also constructed of fireproof material throughout. It is a two story building with a length of 200 feet and a depth of 40 feet. The entire first floor is given over to a local freight office and general receiving and shipping room. On the second floor are light and roomy offices for the division forces, general superintendent and traveling agent. Extending from the building to the freight loading tracks is a covered transfer platform, affording a sheltered place for employes to work in, and protecting incoming and outgoing consignments from the inclemency of the weather.



New Passenger and Freight Stations of the Chicago North Western Railway at Huron, S. D.

Interstate Commerce Commission.

Railway Earnings for February.

THE Commission has made public figures compiled by it with regard to the revenues and expenditures of railways in the United States for the month of February. These figures constitute a powerful argument in favor of the application of the Eastern roads for a five per cent increase in freight rates. Some of the most striking features of the Commission's statement are as follows:

That for the month of February, 1914, the net revenue per mile on the Eastern railroads was $188 as against $413 a year ago. That the total operating revenues of the Eastern carriers was $71,943,390 in February as against $83,582,906, a decrease of more than $12,000,000.

That the total operating expenses in February of this year amounted to $63,311,927, as against $64,633,123 a year ago.

In net operating revenue there was an enormous decline, one that is said to be unprecedented. In February, 1914, the net operating revenue amounted to but $8,631,463, as against $18,949,783 in February, 1913.

The revenue per mile in February amounted to $1,565 as against $1,821 a year ago.

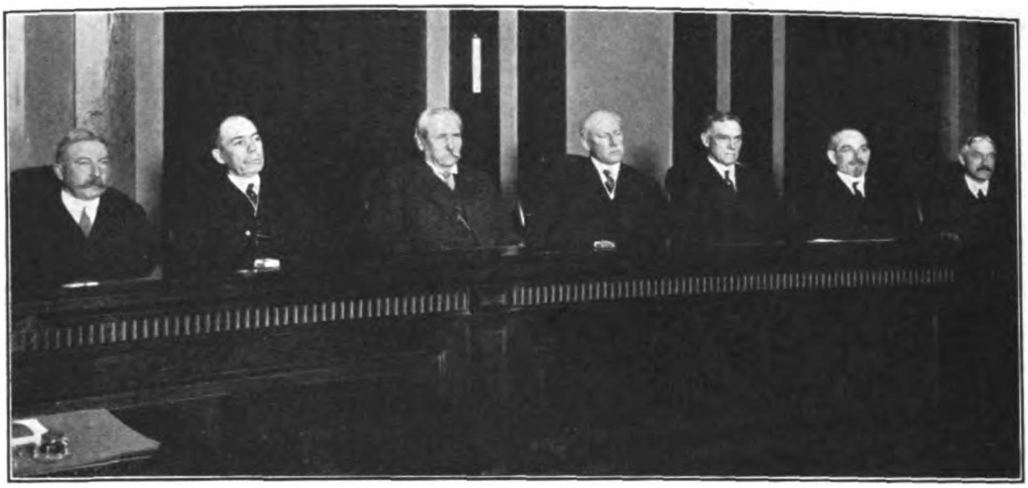
According to the statement, to meet these increased expenses and declines in revenue, the carriers in the Eastern district reduced expenses per mile to $1,377 in 1914, as compared with $1,408 per mile in 1913.

The statement shows the following for all railroads of the United States whose annual income is more than $1,000,000.

In February, 1914, the total operating revenue amounted to $182,739,376 as against $203,170,060 for the month of February, 1913, a loss of over $21,000,000.

Total operating expenses showed $146,941,132 as against $150,892,609. Net operating revenue for February, 1914, amounted to $35,798,244 as against $52,277,451 in February, 1913.

Revenue per mile $908 in February, 1914, as against $1,017 in February, 1913. Net revenue per mile decreased from $262 in February, 1913, to $178 in February, 1914.



THE INTERSTATE COMMERCE COMMISSION.

The Commission as Now Constituted.

THE accompanying illustration shows the Commission in session with a full bench for the first time in several months. As heretofore reported, President Wilson has recently made two appointments to this body, one occasioned by the death of Commissioner John A. Marble, and the other to fill the vacancy created by the resignation of Charles A. Prouty, who has taken charge of the physical valuation of railroads on behalf of the Commission.

The new members are Henry Clay Hall, of Colorado, and Professor Winthrop M. Daniels, of New Jersey. The confirmation of the appointment of Mr. Daniels, who was a New Jersey railroad commissioner, and, at one time, a member of the faculty of Princeton University, was the result of a three-day contest in executive sessions of the Senate and was finally granted by a very close vote. Mr. Daniels is a personal friend of President Wilson's.

Commission Defends Its Course in Rate Increase Case.

COMMISSIONER E. E. CLARK, in a recent letter to A. A. Housman and Company, of New York, warmly defends the attitude of the Interstate Commerce Commission with regard to the advance rate case and asserts that there has not been, nor will there be, any unnecessary delay in arriving at a decision, and that the policy of the Commission is that of absolute fairness towards all interests concerned. The letter is as follows:

"The Commission has no powers except those specifically delegated to it by law. It has no power to approve or disapprove of a rate except 'after full hearing.' It may be that it would have been a good thing for the railroads and certain other interests if the Commission had, without full investigation, immediately approved the proposed general increase in freight rates, but it seems to me that if that had been done in this instance it would be an invitation not only for the roads in other sections of the country to immediately follow with like requests, but for the roads in the territory immediately involved to present an additional request of the same nature if they thought that such action would be to their interests.

"Whatever the transportation charges are the consumers have to pay them, and we think that the consumers' interests are not to be entirely lost sight of.

"I have never felt and do not now feel that one or two black sheep in a flock make the entire flock black. I do not condemn all railroads' financing or all railroad managements because some of their financing and some of their management is both indefensible and inexcusable, any more than I condemn the Christian religion because occasionally a bad man is found in the clergymen's coat.

"I have not been able to quite understand why in this instance a propaganda of importunities, criticism and abuse has been launched against the Commission because it did not decide a question which had not yet been submitted to it. The tariffs proposing these increased rates were filed to become effective November 15, The duty rests upon the Commission to give full hearings and to properly investigate the reasonableness and necessity for the increases and the question of reasonableness is not at all a one-sided question. It means that the charges shall be reasonable for the carrier and for the shipper.

"We have been taking testimony in this situation almost continuously and there has been no policy of delay on the part of the Commission and no delay attributable to us which is fairly the subject of any criticism whatever. The railroads completed the submission of testimony in the proceedings within the last twenty-four hours. The protestants against the increases have not completed their testimony. The Commission has arranged to hear oral argument on the main question involved during the latter part of this month that being the earliest date within which the parties who desire to argue it could properly prepare for argument and prepare their briefs.

"The Commission is proceeding in an orderly way and in a judicial spirit. We do not understand that the law contemplates or that it would be in any sense proper for the Commission to determine questions of this importance upon the basis of which side could secure the largest number of petitioners which side could make the most noise, or which could indulge in the most abuse.

"We are glad to have the expression of views of those who are interested and we undertake to give due and proper consideration to every view thus properly expressed and we shall endeavor to do our duty on the premises realizing, of course, that we must assume and meet responsibilities for our action."

New Passenger Rates Further Reduce Carriers' Income.

THE new passenger rates which become operative on May 1st, and which were filed in conformity with the long and short haul provision of the law under orders of the Commission, show that a considerable percentage of fares on the direct routes will be reduced, but there will also be a number of increases on the indirect routes. The net result, however, will be a general reduction in the revenues that the railroads derive from this class of service.

The new tariffs are the result of the decision of the Supreme Court in upholding the State passenger fare laws, and the decree of the Interstate Commerce Commission compelling the roads to obey the intent of the long and short haul clause of the interstate commerce act. Due to the State two-cent rate laws, it often happens that a through rate is higher than the combination of the local rates. This situation the Commission ordered the roads to correct, making the through rates not higher than the combination of the locals.

The important phase of this question is its bearing upon the petition of the Eastern railroads for permission to make an increase of five per cent in freight rates. The roads claim they have suffered great losses in other directions and now they are compelled to suffer reductions in revenue due to the new passenger fares forced upon them by law.

"Spotting" Tariffs Suspended.

SEVERAL thousand tariffs recently filed by the railroads, canceling allowances heretofore made to twenty named industrial railways in various parts of the country, have been suspended by the Commission until July 30th, with the exception of those affecting the United States Steel Corporation. An inquiry now is in progress with a view to determining whether the allowances made by the trunk lines as divisions of their rates, do not constitute, in a legal sense, rebate on shipments handled by the industrial roads. The Commission found in its investigation of allowances made to the industrial railways controlled or owned by steel and iron companies, that the payments constituted a substantial rebate to the shippers and tariffs canceling those allowances have been permitted to stand.

Half Rates for Refugees.

RAILROAD companies with lines extending to the Mexican border have obtained permission from the Commission to give reduced rates to the State Department for the transportation of American refugees from Mexico.

A fund of $500,000 to bring refugees away was placed at President Wilson's disposal by Congress last week at the President's request.

The Southern Pacific Railroad has agreed, at the request of Secretary Bryan, to carry the refugees at half rates.

Water Line Decisions Indefinitely Postponed.

THE Commission has issued a ruling to the effect that the railroads may continue their interest in water lines after July 1st, provided they have applied for such continuance to the Commission, at least until such time as the Commission shall have passed upon the merits of the applications.

The Panama Canal act requires that the common carriers by rail which have direct or indirect interest in common carriers by water must divest themselves of that interest by July 1, if the two carriers may or do compete for traffic. The act confers upon the Commission discretionary authority to determine whether the rail carrier shall divest itself of its water lines.

It has been evident to the Commission for weeks that it would be physically unable to pass upon all the applications by July 1. It probably will take several months to hear and determine the many proceedings which have been instituted. Meantime, no change in the general situation will take place.

Private Car Inquiry.

RAILROADS and shippers have been notified by the Commission that it is desired that they should discuss certain stipulated questions in the briefs they intend to file in the private car case. In this proceeding the Commission will not file a brief, inasmuch as it will be expected of the respondents to discuss stipulated propositions upon which the Commission especially desires light. The Commission also announced that the discussion on the private car case will not be limited to the subject matter of the questions propounded, but any other matters embraced in the testimony already offered in the investigation which may be deemed pertinent to the problem may be included.

Following is the list of questions the Commission is desirous of having the respondents discuss in their briefs:

"1. If equipment of a special character is owned or supplied by carriers, should a service charge in addition to the freight rate be assessed?

"2. Where the carrier has no available equipment of the kind required by the shipper, should it procure same for the shipper from a car owner, or should the shipper be permitted to make his own arrangements with car owner and supply equipment for his own use? This question to be considered as to, first, ordinary equipment; second, special equipment (the terms 'ordinary' and 'special' in this connection to be defined).

"3. If concerns owning private cars are to be permitted to continue to furnish them to shippers and to make a charge direct to the shipper for the use thereof, should not tariff naming such charges be filed with the Interstate Commerce Commission?

"4. If the railroads are to continue using cars of private ownership, should such car owners be subjected to regulation by this Commission?

"5. What compensation should be paid by the railroads to the car owner or lessee for the use of his equipment, both ordinary and special? Should this compensation be on a mileage or per diem basis, or both? Should compensation be different? (a) Where carriers individually or jointly agree to supply equipment, but shipper elects to supply his own cars? (b) Where carriers fail or refuse to supply suitable equipment and shipper is practically compelled to supply his own cars?

"6. What relation should the investment in the private car, its cost of operation, maintenance and depreciation, and the loaded and empty per car mile freight earnings bear to the rental or allowance to be paid by the carrier for the use of such car?"

"7. Should charges for refrigeration be a stated sum for the entire service, or should they be based on the weight of ice and salt furnished?

"8. (a) Should the railroads be required to perform the initial icing? (b) Should they be required to perform all re-icing? (c) Should they be required to own all of the icing stations and facilities on their respective lines? (d) Should they be permitted to contract with a shipper or shippers of perishable freight for re-icing en route?

"9. Do not the present rules carried in the exceptions to freight classification unduly discriminate in favor of shipments made by the packers in that lower minimum weights and more liberal mixing and other privileges are accorded shipments made by these interests than are accorded other shippers of some of the same commodities, and do not the rules relating to mixing, minimum weight and charge, part lot shipments, return of empty containers, etc., encourage the light loading of cars, the loading of non-perishable freight in refrigerator cars, and result in a greater number of car miles than are reasonably necessary to transport the tonnage?

"On what grounds are empty containers used in shipping meats and packing house products considered a part of the car any more than empty beer packages?

"10. Should present demurrage rules applicable to privately owned cars be allowed to stand, or should they be changed? If changed in what respect?

"11. Should the M. C. B. rules be filed with the Interstate Commerce Commission?"

Rock Island and Pere Marquette Inquiries.

THE Commission has instituted two proceedings of inquiry and investigation relating to Pere Marquette Railroad Company and to the Chicago, Rock Island and Pacific Railway Company. Representative Cramton, of Michigan, introduced a resolution providing for an investigation such as has been ordered by the Commission into the affairs of the Pere Marquette Railroad Company, and Representative Green, of Iowa, introduced a similar resolution providing for an investigation of the affairs of the Chicago, Rock Island and Pacific Railway Company and affiliated companies.

These resolutions were referred to the Commission by the House Committee with a view to determining whether the Commission could conduct these investigations through its division of physical valuation, thereby saving a duplication of labor. As a result of the conferences had with the Commission, the House Committee, instead of recommending the passage of said resolutions by the House of Representatives, requested the Commission to proceed with them as a part of the work of physical valuation and the investigations above mentioned were accordingly instituted by the Commission. Both of the roads mentioned have been the subject of some public criticism, and it is understood that the resolutions and the proposed investigations thereunder are deemed to be matters of considerable public importance by the House Committee.

The Commission proposes to make a thorough investigation in each instance, will take up the work at an early date and will prosecute it to completion as rapidly as may be possible in connection with other important matters now pending before the Commission.

Commission Approves New York Central Plans.

ENDORSEMENT has been given by the Commission to the proposal of the New York Central and Hudson River Company to issue $167,102,400 of 4 per cent mortgage bonds to take up outstanding bonds, incident to the consolidation of the New York Central and Lake Shore roads.

Facts in relation to the proposed bond issue and the Commission's opinion concerning it were transmitted to the Senate in a report prepared by Commissioner Judson C. Clements in response to a resolution directing the Commission to investigate the transaction and report all facts and circumstances relating to it. The Commission reports "that it seems probable that, by the consolidation, a substantial saving can be effected; that from the standpoint of economy in operation and facility in the future financing of the two companies, the consolidation is warranted," and that "neither the consolidation itself nor the exchange of bonds on the basis of increased interest rates indicated, incident thereto, would, so far as we are advised, offend any federal statute."

ORGANIZATION NOTES.

Candidates Selected for Pittsburgh Traffic Club.—The nominating committee of the Traffic Club of Pittsburgh has completed a most excellent ticket for the forthcoming annual election of officers for that Club. All the candidates selected are hard, earnest workers for the Club, and while the electioneering has been spirited, perfect harmony prevails. The selections as made by the nominating committee are as follows:

President—George G. Herring, General Agent, Southern Pacific Co.; Edward F. Lalk, General Agent, Santa Fe System; Robert Main, D. F. A., Can. Pac. Ry., Soo Line and D. S. S. & A. Ry.

First Vice-President—Albert C. Graham, T. M., Youngstown Sheet & Tube Co.; William H. Higgins, T. M., Wheeling Steel & Iron Co.; David M. Wier, T. M., Phillips Sheet & Tin Plate Co.

Second Vice-President—Edwin F. Austin, D. F. A., P. C. C. & St. L. Ry.; Milton H. Jacobs, A. G. F. A., Western Maryland Railroad; Samuel P. Woodside, G. F. A., Wabash-Pittsburgh Terminal Railway.

Secretary—David L. Wells, General Agent, Erie Railroad.

Treasurer—James T. Neison, Commercial Agent, Missouri-Pacific Ry.

Board of Governors. Transportation. Three to elect.—John E. Corfield, General Agent, Union Pacific Railroad; John A. Fitzpatrick, General Agent, T. St. L. & W. Railroad; Will G. Howard, General Agent, Frt. Dept., C. & A. Railroad; Frank D. Hurst, General Agent, L. S. & M. S. Ry.; George H. Kerr, General Agent, Southern Railway; Ralph B. Merrick, General Agent, Frisco Lines; Almer H. Orr, Agent, Atlantic Coast Despatch; Charles R. Phoenix, Commercial Agent, Illinois Central R. R.; George N. Thomas, General Agent, Wabash Railroad.

Board of Governors. Industrial. Two to elect. —Glen A. Aiken, Traffic Manager, Spang, Chalfant & Co., Inc.; Harry F. Denig, Traffic Manager, Chamber of Commerce; Floyd A. Higerd, Traffic Manager, H. J. Heinz Co.; Edwin C. Jepson, Traffic Manager, Wheeling Corrugating Co.; Thomas L. Kane, Traffic Manager, Brier Hill Steel Co.; Alfred R. Kennedy, Traffic Manager, Pittsburgh Steel Co.

Educational Safety Work.—At a meeting of the Philadelphia Safety Council held at Franklin Institute on the evening of April 28th, Mr. J. C. Johnson, superintendent of telegraph, of the Pennsylvania Railroad, delivered an interesting address on the above named subject. He showed how thoroughly the Pennsylvania Railroad conducted its work of this character and how the efforts permeated practically every department of the service. Speaking of the recommendations of the various committees, he said:

"It has been the policy of the management to comply with all such recommendations wherever practicable, and it is significant to note that of 20,213 recommendations made by these committees since the inauguration of this plan, 15,970 or over 75 per cent of them have been complied with at a cost of $489,000."

Mr. Johnson also spoke of the particular necessity of educating the foreign element employed by the railways, as a considerate proportion of the accidents occurred to trainmen, many of whom are unfamiliar with the English language. It has been the policy of the Pennsylvania Railroad for some time to conduct a correspondence course of English for Italian employes, supplemented by lectures delivered in their native tongue at various points on the system by the instructor of the course, in order to furnish them with a knowledge of the name, purpose and proper use of various kinds of tools and appliances used in track work as well as an intelligent conception of any rules, regulations or orders, both written or verbal, that may be given them. In addition to this a pamphlet for guidance and instruction of new employes and other men working on or about tracks, has been printed in several different languages and distributed among employes interested.

Second Annual Outing of Traffic Club of Baltimore.—The Traffic Club of Baltimore, at present is busily engaged in making arrangements for their second annual outing, to be held on Saturday, June 13th, at Miller's Park, Dundalk, Md., on the shores of the beautiful Chesapeake Bay.

The Traffic Club of Pittsburgh have accepted a challenge to play a game of baseball and a large number of their members will be on hand to root. It is also expected that a large number of members from the New York, Philadelphia, Chicago, Detroit and Boston Traffic Clubs, will attend the outing.

The dinner will be an old-fashioned Maryland one, consisting principally of soft-shelled crabs, Maryland fried chicken, Smithfield ham, and other sea foods, for which Maryland is famous. Crab soup and hard crabs will be served ad libitum.

There will also be trap-shooting by professionals, bowling contests, and other sports. The Fourth Regiment Band and field music will be on hand to receive the visitors and will also be at the park to furnish music. This is to be an all-day affair, and arrangements have been made for special train service to the park, and our out-of-town guests will be well taken care of.

Nineteenth Annual Convention of the National Association of Manufacturers.—An innovation in the treatment of unemployment, namely, a discussion of the subject by leaders of industry representing establishments furnishing occupation for forces of workmen numbered by thousands, by hundreds and also in smaller groups, is promised as one of the special features of the nineteenth annual Convention of the National Association of Manufacturers, to be held at the Waldorf-Astoria, New York City, May 19th and 20th. Unusual interest attaches itself to the unemployment conference for the reason that the Convention, which will bring together many hundreds of manufacturers from all parts of the country, will afford the spectacle of a gathering seeking an intelligent solution of a nation-wide problem, the essential facts of which they themselves best understand. Business conditions of the country, the deterring influences now operating with respect to trade activities, and also the prospects in all the main lines of industry, will be treated in detail.

In the address of the president, Col. George Pope, and in a session devoted to the betterment of industry will be presented an elaboration of the Association's dogma that in co-operation between employers and employes lies the hope of labor, as shown by the failure of labor parties in government and by the futility of the class struggle.

To the reports of the Committees for Accident Prevention and Workmen's Compensation, Fire Prevention, and Industrial Education, will be added practical talks by C. W. Price, of the Wisconsin Industrial Commission; Professor Breckenbridge, of Yale University; Edwin G. Cooley, the well-known educator; J. Schereschewsky, of the Public Health Department, Washington, D. C.; Robert Adamson, Fire Commissioner of New York City, and many others, authorities in their various lines.

Legislative issues affecting industry will be discussed at length by James A. Emery, and reports will be made by Committees on Immigration, Uniform State Laws and Patents, etc. In the time devoted to export trade, opportunities in Russia, South American affairs, and West Africa developments will be featured in addresses by Hon. C. J. Medzikhovsky, commercial attache to the Imperial Russian Embassy, Washington; Manuel Gonzales Z., consul general for Costa Rica in New York, and others.

Annual Convention of International Railway Fuel Association.—The sixth annual convention of the International Railway Fuel Association, was held at the Hotel La Salle, Chicago, May 18th to 21st. The following papers were presented for discussion:

Honey-Combing and Clinker Formation, by S. W. Parr, Professor of Applied Chemistry, University of Illinois; Relation of Front End Design and Air Openings of Grates and Ash Pans to Fuel Consumption and Sparks, by M. C. M. Hatch, Superintendent of Fuel Service, Delaware, Lackawanna & Western R. R.; Storage of Coal—Its Feasibility and Advantages to Producer, Carrier and Consumer, by C. G. Hall, Fuel Agent, Chicago & Eastern Illinois Railroad; Sizing of Coal for Locomotive Use, by Alonzo G. Kinyon, Locomotive Fuel Engineer, Clinchfield Fuel Company; A Uniform Method of Computing Locomotive Fuel Consumption for Office Statistics and Trip Performances, by C. F. Ludington, Chief Fuel Supervisor, Atchison, Topeka & Santa Fe Ry.; "Fuel Stations." Report of Standing Committee, Chairman, H. J. Slifer, Consulting Civil Engineer; Coal Space and Adjuncts of Locomotive Tenders, by L. R. Pyle, Traveling Fireman, Soo Line; "Firing Practice." Report of Standing Committee, Chairman, D. C. Buell, Director, The Railway Educational Bureau, Harriman Lines; Pre-Heating of Feed Water for Locomotive Boilers, by Monro B. Lanier, Sales Manager, Monro-Warrior Coal and Coke Co.; Economies in Round House and Terminal Fuel Consumption, by F. W. Folz, Fuel Supervisor, Missouri Pacific Railroad.

National Convention to Promote Foreign Commerce.—After some preliminary consultation between the heads of several of the leading manufacturing concerns in the country and officers of a number of industrial and commercial organizations interested in the promotion of foreign trade, the following call has been issued for a National Foreign Trade Convention to be held at the Hotel Raleigh, Washington, D. C., on Wednesday and Thursday, May 27th and 28th.

The National Foreign Trade Convention will be held under the auspices of the American Manufacturers' Export Association, American Asiatic Association and the Pan-American Society of the United States and other leading commercial organizations throughout the country interested in the promotion and development of foreign trade.

The purpose of the convention is to give expression to the views of men representing the productive activities of the country in regard to the more effective promotion of American commerce in the markets of the world.

The success of this convention must largely depend upon the presence of representative manufacturers, merchants and others from every section of the country, comprising all branches of industry.

The papers to be presented before the convention will be prepared by men identified with the conduct of practical affairs, and will be issued in advance, so as to be in the hands of delegates before the sessions at which they will be discussed. In this way a full and free expression of sentiment from the collective membership of the convention will be made possible, and such an interchange of views as may tend to greater unity of effort will be facilitated.

General Committee: Lloyd C. Griscom, chairman; James A. Farrell, Charles E. Jennings, Charles A. Schieren, Jr., Willard Straight, Eugene P. Thomas, Ellison A. Smyth, Alba B. Johnson, Henry White, Charles M. Muchnic, Frederic Brown, Edward V. Douglass, John Foord.

E. V. DOUGLASS, Secretary,
66 Broadway, New York.

April Meeting of Canadian Railway Club.—J. E. Duval, general superintendent of Car Service of Grand Trunk System, addressed the Canadian Railway Club on April 14th, on the subject of "car service," dealing particularly with conditions in Canada, he said in part:

"In Canada the regulations governing the free time allowance to shippers and consignees are contained in an order of the Board of Railway Commissioners. A penalty of $1.00 per day is assessed against the shipper or consignee for delay to the car after the expiration of the regulation free time.

"The free time is considered liberal; in fact, it is considered by some shippers to be excessive; for instance, it is rather cold comfort to a shipper, possibly a farmer, to be told that you are unable to provide the necessary means of transporting his goods to market in order that he may realize on the result of his labor, on account of a consignee holding a car that may be put in service if released. The regulations in Canada provide an allowance of twenty-four hours free time on an inward shipment after notice of arrival for paying freight charges and ordering the car for special placement, and if the freight is in bond an additional twenty-four hours is allowed for passing the entry. If the destination is not a port of entry another twenty-four hours is added, and then, after the car is placed, forty-eight hours or seventy-two hours free time according to the commodity is allowed for unloading. Additional allowance is made for inclement weather and for holidays.

"For example, a car of coal arrives from the United States in bond. If the destination is not a port of entry, six days may be used before the penalty of $1.00 per day can be applied, and if there happens to be a holiday or two, or inclement weather, both of which are not an unusual thing in the Providence of Quebec, additional allowance is made so that it is not an uncommon thing for cars containing coal to suffer a delay of from six to eight days waiting to be released and the penalty applied only if delayed beyond that number of days, and during all this time, including the days the car is in transit from the connecting road until returned to the road from which it was received, the per diem charge of forty-five cents per day is being assessed against the railway company. Large numbers of cars containing coal coming into Canada during the severe weather more particularly, the per diem paid the owner of the car equals the amount of freight charges, and the railroad has the pleasure of handling the car for nothing.

"The railroads in Canada report all cars subject to car service regulations to the Canadian Car Service Bureau, and all claims for over charges or failure to carry out the regulations, such as charges of discrimination, etc., are investigated and adjusted by the Manager of the Bureau. A quarterly statement is issued by the Bureau showing the total number of cars reported, the percentage released within the free time, the average railroads, consignees and total delays, and the amount assessed and collected. The statement issued by the Bureau in Montreal, which receives reports from all stations east of Port Arthur, covering the quarter ending December, 1913, shows a total of 427,768 cars; about seven per cent were detained beyond the free time, an average of about 4.68 days, a total of about 129,793 days. This 129,793 days represents that many car days during the three months or a working day average of 1,664 cars each day; that is, if all of the cars had been released within the liberal free time allowed under the regulations, it would have given the transportation companies in Canada east of Port Arthur, 1,664 more cars each day to distribute among the shippers and relieve the terminals of that number of cars each day.

"Car service is a chain of three links, the weakness or strength of the chain is gauged by its weakest link; the first link is the placement and loading; the second, the movement from loading point to destination and the third and last, the placement and unloading. Failure on the part of either weakens the whole chain. Transportation companies have their faults and their short-comings, but I cannot in candor, censure a railroad company for failure to provide empty cars for loading when the cars are being held by some consignee for his own convenience, neither can I consistently hold the carrier responsible for terminal congestion and delays in placing cars, when consignees hold cars for storage purposes. I am told and I believe with more or less accuracy, that large industries throughout this country have during the past decade, in some instances, increased their business by from one to two hundred per cent and have not increased their storage capacity by one-quarter that amount, depending in a great many cases upon the railways companies to furnish storage in their cars.

"It is my opinion that most of the railroads have a sufficient number of cars to meet the needs if they could keep them distributed and prevent their misuse by selfish railroads and selfish consignees. The public have a larger say in this matter than many individual shippers seem to recognize. Transportation will provide more economical results if just the right number of cars employed can be made serve the demand. Railroads, if forced by public neglect to promptly release cars on the one hand and by public demand for building more cars on the other hand, can, of course, build enough cars to afford a surplus when cars are in the greatest demand, but the public will have to pay for this extravagance. Freight rates must provide for capital invested in idle cars as well as capital invested in active cars. The railroads and the public are alike interested in a proper car supply, its distribution and its use, and enough cars should be built to meet every reasonable demand, and then everyone should be required to make the best possible use of them.

"The $1.00 per day penalty after the liberal free time allowed is not an incentive to promptly release cars, in fact, it is in some cases considered rather cheap storage. The carriers, of course, stand to lose for the reason that the earning capacity of a car is very much in excess of $1.00 per day, and, as already stated, it is rather cold comfort to a man who is waiting for a car to market his produce to be told that some other person is being assessed $1.00 per day for a car that could be supplied were it released. Numerous instances can be cited where great hardship to the public and carriers could have been avoided had the free time limit been less excessive and consignees release the cars more promptly. My experience is that the slow movement in terminals is the result of delay in releasing cars which have already been placed. Let me give you an illustration: Here is a team track which, for argument's sake, will say hold 25 cars. It is filled with loaded cars say at 7.00 A. M., and is switched again the following night in order that the cars may be available for the following 7.00 A. M. We find that out of the original 25 cars which were placed, only ten have been unloaded, possibly not two of them together; the second, fourth, fifth, seventh, tenth, twelfth, fourteenth, sixteenth and twenty-fifth car, and in order to get the twenty-fifth car it is necessary to pull the whole twenty-five cars and switch out the cars which have been unloaded and put the others back and fill up the available space with other loaded cars which are awaiting placement. The following day a similar condition exists and the cars not unloaded are again returned. Sometimes days, even weeks, some of the original twenty-five cars are pulled out every night and replaced again for the following morning, and, as I have already stated, statistics furnished by the Canadian Car Service Bureau shows that during the last quarter, that 1,664 cars were held in Canada east of Port Arthur each working in excess of the free time allowed by the present car service rules.

"Evidence given before the Dominion Board of Railway Commissioners by a prominent railroad official at a recent hearing held in Ottawa, was to the effect that from an actual check made the previous day of a team track in the city of Montreal, there were 110 cars placed, 73 or over 66 per cent of which had been detained beyond the free time. This will indicate to you the extent to which cars are held for storage purposes and to what extent terminals are congested. The same official stated that there were at that time a large number of cars held awaiting room for placement on this particular team track, and gave as his opinion, that if all of the cars were released promptly after being placed, that the congestion referring to the cars waiting placement, would be relieved within ten days.

"At the same hearing an official of another railroad stated that there was at that particular time a shortage of cars on his road to the extent of about 1,000 cars and that if the cars held under demurrage were released, it would relieve that shortage at once.

"In conclusion, after giving this question careful thought, in my mind congestion in terminals will continue and delays in switching cars unnecessarily follow and there will be more or less delay in supplying cars so long as the free time in releasing cars is excessive or beyond the actual time necessary and cars are held beyond that free time for storage purposes, and I am strongly of the opinion that it is as much in the interests of the shipping public as it is in the interests of the carriers, and that joint action is necessary in order to bring about a remedy for the prevailing evil.

"There is no doubt in my mind, at least, that the carriers alone cannot overcome the difficulty, and by the enforcement of a penalty against railroads for delay in placing a car after its arrival at its destination will not remove the trouble. The remedy, to my mind is, as already stated, joint action that the free time be reduced and a stop put to delays beyond the free time in releasing the cars."

Exposition Officers Tender Banquet to Transcontinental Traffic Association.

THE President and directors of the Panama Pacific International Exposition, gave a banquet at San Francisco on March 26th to the members of the Transcontinental Traffic Association.

This function was the termination of a week's work by this organization in which railway rates from Eastern points to San Francisco, during the exposition, were fixed, resulting in a one way first-class fare for the round trip from Missouri River points, Chicago and other base points of Eastern departure. Tickets are to be good to San Francisco, Los Angeles or San Diego, and the return limit is to be fixed at ninety days. It is also understood that the tickets will carry generous stop-over and exchange privileges and that passengers desiring to return over a different route than that by which they went out, will be compelled to pay only the usual rate between the two points of Western departure.

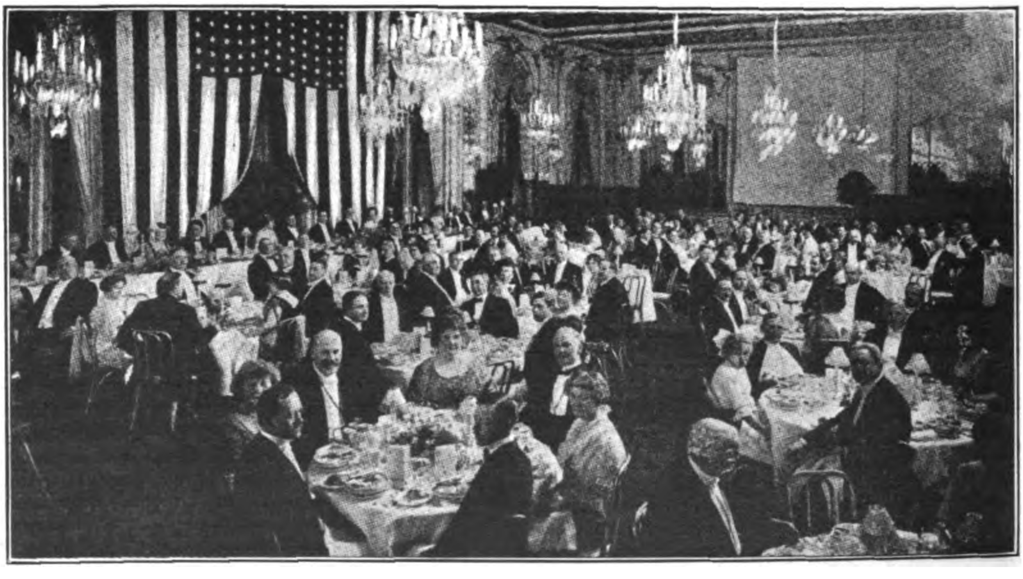
The banquet was attended by 200 officials representing sixty American railways and all the speakers took occasion to speak in congratulatory terms regarding the rapid progress which is being made towards the completion of this marvelous exposition.

The speakers also outlined the publicity plans of the California railways whereby, among the millions who will visit the Exposition, they hope to bring to California, one million people who will remain in the State to make it their permanent home or who will return to California for that purpose.

Students of the University of Illinois Inspect North Western's Chicago Terminal.—A party of students from the Railway Department of the University of Illinois, numbering about fifteen and accompanied by Professor E. R. Dewsnup, were recently personally escorted through the new passenger terminal of the Chicago and North Western Railway and inspected the interlocking towers, power plant, mailing department, express and baggage department and the many other complete features of the terminal, after which they were taken to the Fortieth Avenue shops and escorted though the plant, all the points of interest being explained to them. Addresses were made by Professor Dewsnup and various officials of the Chicago and North Western Railway.

Conventions Booked for Panama Exposition.—Two hundred and nineteen congresses and conventions now have been booked to meet in San Francisco in 1915 during the Panama-Pacific International Exposition. The last organization to notify the Bureau of Conventions and Societies of the Exposition that it will meet in San Francisco during the 1915 universal celebration is the Congress on Religious Education to be held in connection with the Religious Education Association.

Monthly Meeting of the Traffic Club of Newark.—The relative importance of good lighting



BANQUET TENDERED BY THE PRESIDENT AND DIRECTORS OF THE PANAMA PACIFIC EXPOSITION TO THE TRANSCONTINENTAL TRAFFIC ASSOCIATION AT SAN FRANCISCO ON MARCH 26TH.

in the "Safety First" movement occupied the attention of the Traffic Club of Newark at its monthly meeting held at the Washington, April 6th, after the regular business had been transacted.

A. L. Powell, illuminating engineer of the General Electric Company pointed out the part lighting plays in the movement in an illustrated lecture. He dwelt on local general lighting as the necessary factor in illuminating establishments.

The views thrown on the screen showed methods of lighting factories, stores, factory yards, streets, trolley cars, trains, ferryboats and motor vehicles.

The indirect and semi-indirect systems were advanced by Mr. Powell as valuable, as well as strong lamps when placed close to high ceilings in the factories. By using these methods, he said, great quantities of light may be obtained locally, as well as generally in the rooms in which they are in operation.

The factory pictures showed long rows of complicated machinery by the bright lights, the various parts of which could easily be discerned, a point considered by the speaker as essential in avoiding accidents to the men at work. The car lighting systems now employed by many railroad and trolley companies, he said, are of greatly increased benefit to the passengers as compared with former lighting methods.

Frank E. Stone, president of the lumber firm of Stone Hershey and Gibson and chairman of the Membership Committee, announced last night that the club membership had reached its highest point since organization in 1909. There are now 210 names on the roster and every one has imbibed sufficient enthusiasm to bring a total of three hundred by the end of the current year.

Annual Meeting of International Fuel Association.—The Secretary of the International Fuel Association has given notice that the Sixth Annual meeting of this organization, will be held at the Hotel La Salle, Chicago, May 18th to 21st, 1914.

The Executive Committee have selected a list of subjects upon which papers are being prepared, that should be of mutual interest to representatives of Coal Companies and Railroad Companies. The subjects are as follows:

No. 1—Storage of Coal—Its Feasibility and Advantages to Producer, Carrier and Consumer.
No. 2—Sizing of Coal for Locomotive Use.
No. 3—A Uniform Method of Computing Locomotive Fuel Consumption for Office Statistics and Trip Performance.
No. 4—Honey-combing and Clinker Formation.
No. 5—Coal Space and Adjuncts of Locomotive Tenders.
No. 6—Relation of Front End Design and Air Openings of Grates and Ash Pans to Fuel Consumption and Sparks.
No. 7—Economics in Roundhouse and Terminal Fuel Consumption.
No. 8—Pre-heating of Feed Water for Locomotive Boilers.

May Meeting of Central Railway Club.—The May meeting of the Central Railway Club was held at the Hotel Statler, Buffalo, N. Y., on Friday evening, May 8th. Mr. G. W. Howard, assistant superintendent of State Foresters gave an illustrated lecture on forestry and forest fire fighting in New York State. This lecture followed an extremely interesting paper by Mr. W. F. Goltra, president of the W. F. Goltra Tie Company, on "Treating Railroad Ties and Timbers as Practiced in North America." An abstract of this address will be found in another section of this issue.

Spring Meeting of American Railway Association.—The spring session of the American Railway Association will be held in New York City, on May 20, 1914, at eleven A. M.. Reports will be presented by the following Committees: The Executive Committee; the Committee on Transportation; the Committee on Maintenance; the Joint Committee on Automatic Train Stops; the Committee on Relations between Railroads; the Committee on the Safe Transportation of Explosives and Other Dangerous Articles; the Committee on Electrical Working, and the Committee on Nominations.

The election of a president and a first vice-president will take place at this meeting. Two members of the Executive Committee, three members of the Committee on Transportation, three members of the Committee on Maintenance, three members of the Committee on Relations between Railroads and three members of the Committee on Nominations are to be elected.

International Engineering Congress; 1915.—The following list of topics to be treated in this section on Mechanical Engineering at the International Engineering Congress which is to be held in San Francisco in 1915, gives a good idea of the character of the publications which it is intended to issue and the remarkable scope of the topics which will be presented and discussed at the meeting. Many of these topics appeal strongly to the railway engineer.

(1) Recent progress and present status of foundry practice, and casting metals.
(2) Recent progress and present status of the art of forging.
(3) Equipment processes, and the methods for the boiler-shop.
(4) Machine shop equipment, methods, and processes.
(5) Automatics.
(6) Special processes for shaping and forming metals.
(7) High temperature flames in metal-working.
(8) Industrial management.
(9) Safety engineering.
(10) Industrial Museums as an educational factor.
(11) The steam-engine of the year 1915.
(12) The steam-turbine of the year 1915.
(13) The internal-combustion engine of the year 1915.
(14) Motors of the Diesel type.
(15) The Humphreys gas pump.
(16) The steam boiler of the year 1915.
(17) Refrigeration.
(18) Pneumatics
(19) Lubrication and lubricants.
(20) Water wheels of pressure type.
(21) Water wheels of impulse type.
(22) Hydraulic power developments and use.
(23) Power plant design.
(24) Motor vehicles, passenger type.
(25) Motor vehicles, utility type.
(26) Motor tractors.

Many of these topics will be treated as symposiums with contributions representing the practice in more than one country.

The various sections outlined for the work of the Congress and the volumes to be issued are as follows:

Vol. I.—The Panama Canal.
Vol. II.—Waterways and Irrigation.
Vol. III.—Municipal Engineering.
Vol. IV.—Railways and Railway Engineering.
Vol. V.—Materials of Engineering Construction.
Vol. VI.—Mechanical Engineering.
Vol. VII.—Electrical and Mechanical Engineering.
Vol. VIII.—Mining, Engineering and Metallurgy.
Vol. IX.—Naval Architecture and Marine Engineering.
Vol. X.—Military Engineering and Miscellaneous.

W. A. Garrett Addresses Lansing Chamber of Commerce.—On April 9th, the new chief executive officer of the Pere Marquette Railroad, Mr. W. A. Garrett, addressed a meeting of the Chamber of Commerce at Lansing, Mich., in an effort to point out how the people of the State and the Road could get together to produce results of a mutually beneficial character. Mr. Garrett stated that the average rate for the transportation of freight over the Pere Marquette is but six mills per ton per mile, with which not even the bare necessities can be provided.

Mr. Garrett pointed out that criticism should be constructive, not destructive, and that while it is easy to fall into the way of speaking words of condemnation, it took courage to boost where others knocked and that one courageous word might turn the tide of adverse criticism, when given at the right time. Quoting from an editorial appearing in the Tuscola County "Pioneer Times" of April 3rd, he said:

"It seems to us that a little gratitude and a little friendly spirit should be manifest, instead of poking around trying to find something about which to knock. We presume that this grows out of the fact that most any one can knock, and the emptier the receptacle the greater the noise; while but comparatively few can construct and do things." In closing he said:

"The Pere Marquette needs a helping hand. We want your good will; we want your slap on our back and your words of encouragement. We want you to look forward to us and help us in the onward movement we are making. Help us acquire new confidence, or better, help us to regain the old confidence and for your business and confidence, we will give you in reward, high efficiency and safety in service."

LEGISLATION.

Panama Canal Developments.—Recent developments in the United States Senate with reference to the Panama Canal tolls repeal measure, has greatly strengthened the position taken by President Wilson. Perhaps the most severe criticism to which the President has been subject, relates to his apparent disregard to that plank of the Democratic platform, on which he was elected, and which favors the exemption of American shipping. Senator Gore, of Oklahoma, however, has made a canvass of the delegates to the Democratic Convention which nominated Mr. Wilson in 1912, and finds that more than half of these men endorse the Panama tolls repeal bill advocated by the President. This greatly strengthens Mr. Wilson's position before the country and in further view of the fact that many experts and prominent men, including Colonel Goethals, are upholding him, it appears more than likely that the Senate will take favorable action.

Locomotive Headlights.— In connection with the proposed National Legislation, looking to the general adoption of locomotive headlights of a greater candle power than that ordinarily employed, the Special Committee on Relations of Railway Operation to Legislation has recently conducted an investigation to determine just what character of locomotive headlights were employed at the present time by the steam railways of the United States. The results of this investigation are briefly summarized in the following table:

	Locomotives Operated.			
Headlight.	Passenger.	Freight.	Switch.	Total.
Electric—Arc	8,923	13,076	121	22,120
Electric—Incandescent	176	142	314	632
Acetylene	908	1,585	411	2,904
Character of Oil	7,206	24,471	10,536	42,213
Total	17,213	39,274	11,382	67,869

The railroads object to this new legislation principally on the grounds that they are at the present time, using such headlights as, according to their practical experience, serve best to operate trains with the greatest degree of safety.

It is asserted that the powerful headlights advocated in the bills now before Congress would defeat their purpose inasmuch as the concentration of such powerful rays often has the effect of confusing the engineer or causing him to misinterpret signals rather than to prove of real assistance to him. To quote from the statement of Mr. D. F. Crawford, general superintendent of motive power of the Pennsylvania Lines West of Pittsburgh, before the sub-committee of Committee on Interstate and Foreign Commerce of the House of Representatives at Washington, D. C., on January 16th:

"A headlight of high candlepower on a locomotive does to the engineman running toward it exactly what a strong light on an automobile does to all of us when we endeavor to cross the street in front of it. It contracts the iris of the eye and reduces the eye range, and nobody can help it. A strong light, thrown toward a person contracts the iris and reduces the ability of that person to see objects. Sometimes, if the light is very intense, it takes several seconds for the eye to recover from the effect of the light, and for the iris to open sufficiently to permit the appreciation of a dim light. A strong light, thrown toward a signal, can and does reflect back its own color instead of the color of the signal.

"I have seen absolutely a green light sent back from a red roundel with the signal at 'danger,' and on one railroad, on a surprise test, the engineman ran past a signal set at red and claimed he read a green from the signal. The officers of that railroad made a test and found that he did get a green reading. The engineman got a reflection from his own headlight which gave him a signal under which he had the right to proceed, although the signal actually indicated a dangerous condition. It is true there are some electric headlights running—strong lights—quite a number. Fortunately for the traveling public most of them are on roads that have thin traffic and few signals. Every strong light on a locomotive has the potential for an accident. Accidents do not occur every time the potential exists. In the reports of the Interstate Commerce Commission there are several accidents reported in which the strong light was involved. When an engineman is running toward a strong headlight, and the flagman, with a red lantern, swings the lantern across the track, it is frequently missed by the engineman, who ought to regard it. In these tests, which we made here, we endeavored to imitate the road conditions as far as possible, and I will say, gentlemen, with one type of headlight facing toward the observers on 38 per cent of the opportunities they missed the red flagging signal. These observers were locomotive enginemen, road foremen of engines, assistant train masters, and the members of the committee, all of whom have had many years' experience in railroad operation. The fact that the United States Government will take away the license of a master of a ship who turns his searchlight on the pilot house of another vessel is a pretty good indication of what would occur if a locomotive headlight is turned to the cab of another locomotive. The fact that practically every city in this country has passed or is considering ordinances forbidding the use of high-powered lights on automobiles and vehicles in the streets shows that there is a reason for avoiding lights of high power.

"There is but one railroad in the United States that has had any considerable number of electric headlights on it and has a considerable traffic, and that is the Chicago & North Western. Recently, to meet the requirements of the various State laws through which they operate, they have applied in the neighborhood of 1,100 electric headlights. I asked Mr. Bentley about how long those headlights had been in service—what was their average life—and he said about three months; and in about three months' use of electric headlights on a road with a fairly dense traffic they have had pages and pages of complaints from their own men. Some of them are included in this book; in fact the majority of them are. Mr. Bentley actually found that the engineman on one engine went out in front and tilted the headlight so as to point the light down on the track at as short a distance as possible in front of the engine. When they were asked why they did so, they said they could not read the signals when it was set the usual way. If these lights of high intensity are placed on railroads that have heavy traffic the trouble will begin. We have divisions where an electric headlight might have run for the past 10 years, and I do not believe there would be any possibility of an accident, because we have few trains at the present time, and I do not believe it likely we could get into very much trouble; but on the four-track, and in places a five-track road, with a signal bridge about every 4,000 feet, there would be trouble. I was here yesterday and heard the discussion in regard to a law asking us to put signals at frequent intervals over the entire railway. Here is another bill that asks us to wipe the signals out, to put a device on our locomotives which minimizes or reduces the effectiveness of every one of the signals.

"I have ridden behind an electric arc light and had it arranged so we could turn it out—turn it off and on—and a red roundel—that is, the red signal lamp, or the red glass in front of the signal lamp—with no headlight would appear to be at, say, 2,000 feet away from it—1,500 to 2,000 feet away from it—would appear to be about six inches in diameter, but the instant we turned that electric headlight on it—remember, I was looking through the rays of the electric headlight—that red spot would seem to shrink to two inches in diameter. It simply reduces the comparative illumination that reaches the eye, and you wipe out or reduce the efficiency of every signal that is put up."

LEGAL.

To Test Power of Missouri Commission.—In order to determine whether the Missouri Public Service Commission has power to permit a railroad to charge more than the maximum fixed by statute for freight and passengers, a mandamus test suit to compel the Commission to authorize the company to charge more than two cents for passengers and more than the maximum for carload commodities, has been filed against the commission by the Missouri Southern Railway Co., in the Supreme Court. The company, which operates fifty-four miles of road between Leeper, in Waynes County and Bunker, in Reynolds County, applied several months ago for authority to increase its rates. The Commission formally denied its application Wednesday upon the ground that it was without authority to permit more to be charged than the maximum for freight and passengers fixed by statutes.

The Southern Pacific's Answer in Unmerger Suit.—The Southern Pacific Company on April 30th, filed at Salt Lake City in the District Court of the United States for the District of Utah, its answer in the government suit to divorce the Central Pacific from the Southern Pacific. The answer, after specifically denying all allegations that the Sherman Anti-Trust law has been violated, points out not only that the two lines were originally built, operated and developed as one road, but that, as far back as 1898, the United States Government, itself, practically recognized the combination as wholesome.

It shows, furthermore, that in the joint operation of these lines, through trains have been run by the most direct or convenient route without reference to their ownership, and that any separation of the Central Pacific lines from those of the Southern Pacific cannot now be had without detriment to both properties, and without impairing and inconveniencing the public service and the communities through which the lines pass.

In a brief historical resume, the following facts are brought out:

First, That the lines of the Southern Pacific Railroad Company were built as extensions and connections of the lines of the Central Pacific Railroad Company, and by the same stockholders.

Second, That as the lines of the Southern Pacific Railroad Company were completed, they were directly leased to the Central Pacific to be operated as a unit with its lines.

Third, That on April 1, 1885, the Southern Pacific Company, to simplify the organization, took over under lease for 99 years, all the lines of both Central Pacific and Southern Pacific; and has since managed and developed them as one property, considering only efficiency of service to the public, without regard to corporate properties, such as terminals and branches.

Fourth, That relying on the terms under which the Central Pacific's debt to the Government of $58,000,000 was settled in 1898, the Southern Pacific Company undertook heavy financial obligations, not only guaranteeing the payment of this debt, but also guaranteeing the $100,000,000 four per cent mortgage bond issue of the Central Pacific. In this connection, it is contended that the Government could not consistently and with justice have accepted this settlement of which it did have full knowledge as party thereto, if the arrangement involved a relation between the roads contrary to public policy.

Fifth, That even as late as 1912, in the recent so-called Harriman unmerger suit, when the United States Supreme Court ordered the dissolution of the Union Pacific and the Southern Pacific, the Court, the highest in the land, found no reason to disturb the relations between the Central Pacific and the Southern Pacific. The Supreme Court ordered the dissolution of the Union from the Southern Pacific, but as to the Central-Southern Pacific relations, said: "We find no reason to disturb the action of the court below." The court below had declined to disturb the Central-Southern Pacific relations, although the facts concerning it were at the time brought out.

Commenting on the fact that the lines were in one ownership and management and developed as one property, the early part of the answer points out that, because of this fact, little heed was given as to which corporation should hold the title to terminal properties and branch lines. Accordingly branch lines from points on the Central Pacific were built and owned by the Southern Pacific Railroad Company, these branches having no connection with the main line of the Southern Pacific Railroad Company except through Central Pacific lines. At important points the entire title to valuable terminal properties was taken and held in the name of the Central Pacific Railroad Company. At other points the title to terminal properties was held by the Southern Pacific Railroad Company.

Any separation of the Central Pacific lines from the Southern Pacific lines cannot now be had except with great detriment and injury to each of these companies, and in order that these lines should now be operated as separate properties, there must be expended very large sums of money to secure separate terminals to complete these properties for operation on a basis independent of each other. Besides, such separation would necessarily impair the public service, as through direct routes could not be used as efficiently or economically for operation of trains by one company as under present conditions.

The answer further sets forth the granting by the Government of a subsidy to the Central Pacific Railroad Company, by which that company became indebted to the Government in a sum exceeding $58,000,000.

On July 7, 1898, Congress passed an act providing that the Secretaries of the Treasury and the Interior and the Attorney General constitute a commission with full power to settle this indebtedness by agreement between them and the railroads involved and with the written approval of the President of the United States.

The answer alleges:

"It was well understood by the Congress at the time of the passage of this law that the said indebtedness of the Central Pacific Railroad Company to the United States Government amounted to at least $58,000,000 and according, therefore, to the terms of said law, the Central Pacific Railroad Company was required to pay during each of the ten years allowed for the payment of said debt the sum of $5,800,000 per annum.

"This sum exceeded many times over any possible net earnings of the Central Pacific Railroad Company that could be applied to the payment of this debt, and it cannot be questioned that the Congress intended and understood that this debt could only be paid by the employment of the credit and resources of the Southern Pacific Company, and that compliance with the prescribed terms of the settlement necessarily involved participitation therein by the Southern Pacific Company, and the only motive or consideration which could induce the said Southern Pacific Company to participitate in the payment of the Central Pacific Railroad Company's debt to the Government was the existence of the aforesaid relations between it and that company and its desire to continue such relations and to make permanent its control of that part of its system.

"The defendants, therefore, allege that the Congress at the time it enacted the said law of July 7, 1898, contemplated and expected such participation by the Southern Pacific Company in the settlement provided for and had full power to arrange for such security for the payment of said indebtedness as to said commission might seem expedient."

The commission created by Congress under the authority of this act made an agreement with the Central Pacific Company for the payment of this debt in twenty semi-annual installments.

Copies of the agreement and memoranda were given the widest publicity, so that not only the private parties interested, but the President of the United States and all Government officials, including members of Congress, knew that by the terms of the re-adjustment, the Southern Pacific Company was to acquire the ownership of the entire capital stock of the Central Pacific Railway Company, and knew also of the lease and operation of the Central Pacific lines as a part of the Southern Pacific system, the things now complained of as being in violation of the Sherman Anti-Trust law.

It is recited that they knew also at the time that the Central Pacific could not, without the aid of the Southern Pacific, comply with the terms of the agreement, and they based on the participation of the latter their assurance that the agreement would be carried out financially.

In consequence, it is recited, the Southern Pacific Company incurring the obligation of guaranteeing the $100,000,000 of the first refunding four per cent mortgage bonds of the Central Pacific Railway Company, which are now outstanding, and of acquiring the $12,000,000 preferred stock and the $67,275,500 common stock of the Central Pacific Railway Company. For this stock, the Southern Pacific Company gave neither cash or its equivalent in its own capital stock. Furthermore, the United States Government received $58,812,715.48 in payment of the Central Pacific debt, which it would not otherwise have been paid.

In like manner, relying on the expectation and belief created and induced by the Government as above, the Southern Pacific Company has since incurred heavy financial obligations, details of this being given in the answer.

It is shown, for instance, that on March 1, 1911, it unconditionally guaranteed an issue of bonds of the Central Pacific Railway Company, known as that company's four per cent 35 year European loan of 1911, aggregating 250,000,000 francs, a loan made for the benefit of the Central Pacific Railway Company, and it furnished out of its own treasury the collateral of stocks and bonds by which said loan is secured, and among other onerous conditions, it agreed that the loan should mature and become exigible if it disposed of the stock of the Central Pacific Railway or if its lease thereof terminated.

It is then set forth that by reason of the transaction with the Government and its duly authorized agents, the Southern Pacific Company had the right to believe and rely on the fact that its relations with the Central Pacific Railroad Company, its lease of the lines and property of said company, and its acquisition of the stock of said company were not, nor were any of them, in violation of the laws of public policy of the United States Government.

For these reasons, it is averred, any objections which could ever have been made by the Government to either the lease or the stock ownership mentioned have been waived and that the Government has fully assented thereto and fully acquiesced therein.

The answer further relies upon the decree of the United State Supreme Court in the suit which resulted in the separation of the Union Pacific Railroad Company from the Southern Pacific Company as a bar to the present suit. The answer sets forth that it appeared from the petition of the Government in the former suit that the Southern Pacific Company was the owner of the capital stock of the Central Pacific Railroad Company and absolutely controlled the operation and business of said Central Pacific Railroad Company; that the principal relief sought by the Government was to free the Central Pacific-Union Pacific transcontinental line from all restraint of trade and commerce, which, it was alleged, had been created by the said defendants or any of them; that the fact that the Southern Pacific Company exercised complete domination and control over the Central Pacific Railway Company was alleged in the petition and the necessary parties against whom an effective decree could have been entered terminating such control, were before the court, and if the ownership of the Central Pacific Railroad Company by the Southern Pacific Company constituted any violation of the laws of the United States, it was the duty of the Government to submit its case as to such violation and take a decree terminating the same, if found to exist, but after joinder of issue and the full taking of testimony as to all these matters, the trial court entered its decree dismissing the petition and denying the Government any relief whatever.

The Supreme Court of the United States, on appeal, reversed said decree only upon the point that the control of the Southern Pacific Company by the Union Pacific Railroad Company was illegal and in violation of the act of July 2, 1890, but as to all other matters the Supreme Court of the United States said:

"We find no reason to disturb the action of the court below," and as to such matters the final decree was against the Government in favor of the defendants.

The answer was filed by all the defendants other than the Union Trust Company, of New York, through Wm. F. Herrin, solicitor for the defendant, and J. P. Blair, P. F. Dunne and Garrett W. McEnerney, of counsel.

TRAFFIC.

Official Classification Committee to Meet Quarterly in the Future.—The chairman of the Official Classification Committee has instructed sent out a general notice that hereafter meetings will be held quarterly instead of semi-annually and that subjects listed for consideration prior to the first day of February, May, August and November, will be included in the documents for meetings to be held early in the months of March, June, September and December.

The shipping public will be greatly benefitted by this change, inasmuch as the arrangement will enable them to secure more prompt action to their request for classification changes as heretofore the Classification Committee has had only two general meetings each year.

Process in the Liquidation of the United States Express Company.—The United States Express Company on March 31st, the majority of its shareholders having voted affirmatively on the question of liquidation, sent notice of abrogation of contract to all railroads over whose lines United States Express service is being operated. The stipulated dates of abrogation are variously, April 30th, May 31st, and June 30th, according to the contracts. If all abrogations are finally accepted by the railroad companies on the dates specified, United States Express will cease operations as a transportation agency on June 30th, next.

Such replies as have been received from railroad companies in acknowledgment of notice of abrogation express regret that conditions have become such in the express transportation field as to necessitate the United States Express Co.'s retirement from business. These replies do not treat of the matter of contracts specifically, but their general tenor indicates a willingness to accept notice of abrogation as stipulated.

The general belief among transportation people who have followed developments closely is that a majority of railroads will accept these notices of abrogation, and proceed to reassign the expiring contracts or make new contracts with some other express carrier. It is admitted, however, that a possibility exists that in some cases the legality of the action of United States Express Company will be tested in court.

Directors of the United States Express Co., who, under the power given them by the company's articles of association will liquidate the effects of the company, are not likely to take any further steps toward final liquidation until the transportation agreements with the railroads are disposed of. No further action on the part of the directors, as the liquidating body, is looked for, therefore, until after the close of the current fiscal year, or later, as it may be necessary to alter some of the dates specified in the notices of abrogation, which dates are in effect only tentative.

Hamburg-American Line to Carry Exposition Goods Free of Charge.—The Hamburg-American and Kosmos Steamship Lines have agreed to transport German Exhibition goods for the Panama-Pacific International Exposition from Hamburg to San Francisco and return free of charge.

In their communication to A. M. Mortensen, traffic manager of the exposition, the directors of the Hamburg-American Company say that they have been moved to make their offer by a desire to assist in making the 1915 celebration a success and to encourage the exhibition of German wares at the exposition.

They offer to carry bona fide German exhibition goods to and from San Francisco free of charge for freight, subject to several conditions. All goods enjoying such privileges must be strictly of German origin. The shipper at Hamburg must pay the freight charges to San Francisco. At the close of the exposition the goods are to be shipped back to Hamburg where the freight charges for transportation both ways will be refunded. Should the exhibitor sell his exhibition goods, he must forfeit the freight charges from Hamburg as these will not be refunded.

The Union Steamship Company of New Zealand, through its local agents, Hind, Rolph and Co., has announced its intention of carrying exhibits of New Zealand resources and produce to San Francisco from New Zealand and return free of charge.

Southern Roads Preparing for Enlarged Trade with South America.—In anticipation of a stimulation in South American trade through the influence of the opening of the Panama Canal, the Southern Railway Company, the Cincinnati, New Orleans and Texas Pacific, the Alabama Great Southern and the Mobile and Ohio, have appointed Mr. Charles L. Chandler, South American Agent, with headquarters at Chattanooga, Tenn. Mr. Chandler will not only work on the lines of these companies, but will also co-operate with manufacturers and merchants in other parts of the United States, who are so situated that they can advantageously ship to South American markets through South Atlantic and Gulf ports. It is expected that the completion of the Panama Canal and the consequent stimulation of interest in trade with all South America will result in the development of a large volume of traffic from points in the Mississippi Valley and the Middle West.

Mr. Chandler, who was South American commercial expert in the Consular Bureau of the State Department, previous to his present appointment, has had years of experience in Latin-American countries and is thoroughly acquainted with their markets and the needs of their people. He will advise those who desire to develop a South American trade where their wares can be sold, will aid them in the preparation of letters and circulars and will instruct them as to the methods of packing required for different markets. He will also keep in touch with commercial bodies in Central and South American countries and their diplomatic representatives at Washington, and will be able to give business men the earliest possible information with regard to Government and other large contracts to be let. He will also begin a campaign in Latin-American markets for the purpose of stimulating the demand for American goods.

Striking Features of the Import and Export Trade of the United States.—In its monograph "Annual Review of the Foreign Commerce of the United States," just issued, the Bureau of Foreign and Domestic Commerce, Department of Commerce, states that the striking characteristics of the import trade of the United States in the fiscal year 1913, when compared with the import trade of earlier years, are: (1) An increased percentage entering free of duty, and (2) An increased percentage imported for use in manufacturing. The percentage of the imports which entered free of duty in 1913 was 54.47, being larger than in any earlier year except 1892 (55.35 per cent) and 1894 (57.98 per cent), the opening and closing years of the brief period in which sugar was admitted free of duty under the act of 1890. The total value of merchandise imported free of duty in the fiscal year 1913, was 987.5 million dollars, against 367.2 million in 1900; and of dutiable, 825.5 million dollars, against 482.7 million in 1900, merchandise entering free of duty in 1913 having formed 54.47 per cent of the total imports, against 43.21 per cent in 1900.

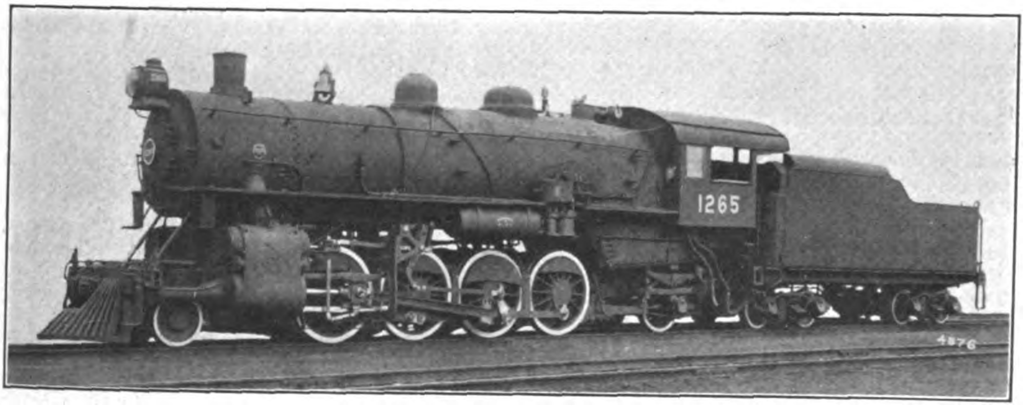
Another monograph issued by the same department illustrates sharply the changing character of our commerce and of the occupations of our people. Agricultural products, which formed, in 1880, 84.3 per cent of the total domestic exports, were in 1913, 46.1 per cent of the total. Manufactures, exclusive of foodstuffs, which were, in 1880, 14.78 per cent of the exports, were in 1913, 48.8 per cent. The actual figures are: Exports of agricultural products in 1880, 694.3 million dollars and in 1913, 1,121.3 million; exports of manufactures in 1880, 121.8 million dollars and in 1913, 1,185.1 million; the increase in agricultural products being 427 million dollars, and that in exports of manufactures considerably more than one billion dollars. This transition of the United States from an exporter of natural products to an exporter of manufactures has been a steady movement during the last third of a century.

Latest Population Figures for the United States.—According to figures just published by the United States Census office, the United States is now a country of 109,000,000 people. According to the same authority, the population of the United States in 1910, was in round numbers 101,500,000 people, so that the latest figures show an estimated gain of over 7,000,000 people in a little more than four years.

EQUIPMENT.

New Locomotives for the Missouri Pacific.

THE Missouri Pacific-Iron Mountain System has received the last of the twenty-five locomotives recently purchased from the Baldwin Locomotive Works. These engines are of the Mikado type and are among the largest and most powerful of that class in service on any railroad in the country. Each weighs 400,000 pounds when equipped for service, and measures 78 feet 4½ inches in length and 15 feet 5½ inches in height. The cylinders measure 27 x 30 inches, and the boilers have a steam pressure capacity of 170 pounds to the square inch. The weight on the main driving wheels is 209,000 pounds and the engines have a tractive force of 50,160 pounds. They are equipped with electric headlights, electric cab lights and Schmidt superheaters. Eight of the engines have been assigned to service on the Joplin Division, three to the Eastern Division, eight to the Omaha Division and six to the Southern Kansas Division.



Mikado Type of Locomotive Recently Completed by the Baldwin Locomotive Works for the Missouri Pacific-Iron Mountain System.

Heavy Equipment Orders Placed by Southern Railway.—Following his statement of February 20th, in regard to Southern Railway financing, President Fairfax Harrison announces that with the proceeds of five million dollars of equipment trust notes, Southern Railway has just contracted for 75 locomotives, 54 all steel passenger train cars, and 4,075 freight train cars, largely of steel construction.

Of the locomotives, 45 will be of the heavy Mikado freight type, 15 of the Pacific passenger type, 13 six-wheel switchers, and two eight-wheel switchers. They will be built in accordance with the latest and most improved designs and will be similar to motive power of the same types now in service on the lines of the Southern Railway where traffic is heaviest.

The all steel passenger equipment includes 35 coaches of the largest and latest type, electrically lighted, four dining cars, five combination passenger and baggage cars, five mail and baggage cars, and five baggage and express cars.

The 4,075 freight train cars will include 3,250 thirty-ton steel underframe ventilator box cars, 500 fifty-ton all steel flat cars, 200 cabooses, 100 steel underframe stock cars, and 25 steel underframe poultry cars.

This large equipment order shows the belief of Southern Railway Company in the continued prosperity and growth of the territory it serves and its purpose to enlarge its facilities to keep pace with that growth. As soon as it can be delivered by the builders, this equipment will be placed in service and at the disposal of the business interests of the Southeastern territory.

The Delaware and Hudson Purchases Engines.—With a view towards meeting the increase in traffic which is hoped for in the future, the Delaware & Hudson Company has placed this large order for twenty-five engines with the American Locomotive Company, at Schenectady.

It is well known that the company's business has been slack for months as has been the case with most of the Eastern railroads, and that these engines are not needed for its present business. So large a purchase will give the company a surplus of motive power to meet busier times, which are confidently expected. It is a move made in the interest of the men at the locomotive works at Schenectady, who will be the first to profit, and who can thus be kept employed. It will mean a decided increase of activities at that point.

LABOR.

Efforts to Organize Brotherhood of Federated Railroad Employes on the Pennsylvania.—S. C. Long, general manager of the Pennsylvania Railroad, has authorized the following statement with regard to recent difficulties which have occurred with certain employes on account of a movement looking to the establishment of a "Brotherhood of Federated Railroad Employes."

"Efforts to organize a so-called 'Brotherhood of Federated Railroad Employes' among the Pennsylvania Railroad employes at the expense of the efficiency of the service, have resulted in those belonging to this organization circulating false reports of strikes at different points on this railroad.

"The facts are these:

"One hundred and forty-eight men on the Williamsport Division, comprising shop men, truckers in freight houses, and trackmen, failed to report for work yesterday. They were immediately notified that they were discharged from the service and to call for the pay due them. Under no circumstances will they be taken back into the service of the company. Their places will be filled from the ranks of employes who have been on furlough.

"From what can be learned, the men who refused to work did so because the company, in reducing forces recently, followed the rule of discharging first the least efficient men rather than in some cases retaining some of the inefficient employes because they had been longer in the service than others. In all demotions as well as promotions, fitness and ability take precedence over all other qualifications for employment.

"It is not true, as reported, that there has been any strike, because officers of the company had refused to hear grievances of employes.

"The officers of the Pennsylvania Railroad are always ready to meet employes who have grievances to present, and no change has been made in this policy."

STATE COMMISSIONS.

New York.—Governor Glynn has signed the bill which this Association endorsed giving the State Public Service Commissions the same power that the Interstate Commerce Commission has for suspending rate increases until the inquiries have demonstrated the necessity for them. In future, the Commissions will be able also to suspend any increase in rates, and compel the public service corporations making them to demonstrate their justice.

Pennsylvania.—The Public Service Commission has issued an administrative ruling to the effect, that after careful consideration, it has come to the conclusion that the according to ministers of religion of free intrastate transportation or such transportation at reduced rates, is discriminatory and illegal under sections 8 and 9 of Article 3 of the Public Service Law, and that the Commission is without warrant to otherwise record it under the present public policy of the State, as fixed by law. It is further stated, however, that should application be made to the Legislature at the next or some subsequent session, means may be found by that body to afford the relief desired by the applicants.

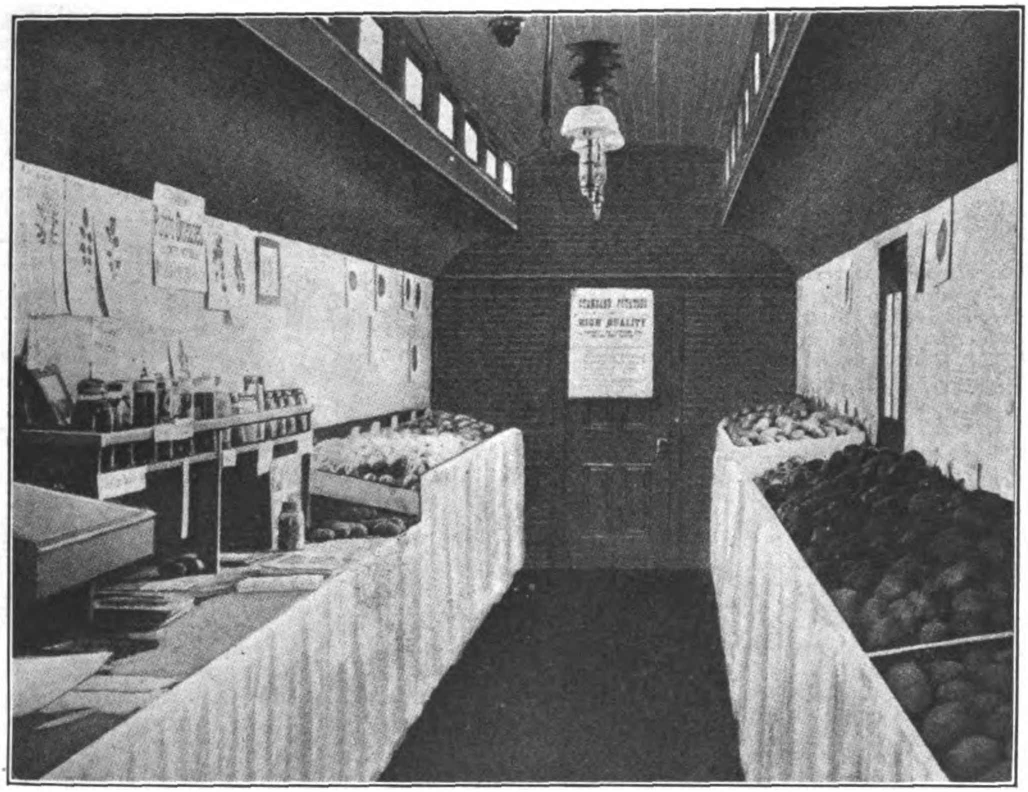
LAND AND INDUSTRIAL.

Southern Railway Wins First Prize at Texas Corn Show.—The Southern Railway's exhibit at the Sixth Annual Corn Exposition held in Dallas, Texas, during February, was awarded first premium as the best and most beautiful exhibit at the Exposition. One of the main features was a very large exhibit of fine corn gathered by the Department of Farm Improvement Work. There were ten ears each from one hundred and seven different fields, all of which were cultivated under the department's field agents. There was also a large display of Virginia apples, as well as a collection of grains, grasses and foreign crops in sheafs, baled hay, together with half a dozen varieties of sweet potatoes, bananas from Alabama, peanuts, pecans, fruits, truck crops and other vegetables from all parts of the southwest, along the lines of the Southern Railway's system. The accompanying illustration gives some idea of the attractiveness of the booth.

North Western's Potato Growing Campaign in Wisconsin.—The accompanying illustration shows the interior of a potato exhibit car recently run over the Chicago and North Western Railway in Wisconsin. This car is accompanied by a demonstrator or lecturer who gives instructions as to how to procure the best results in potato growing. It is the effort of the North Western Road to create an intelligent enthusiasm for

SOUTHERN RAILWAY SYSTEM
SOUTHERN RAILWAY SYSTEM

Booth of Southern Railway at Exposition at Dallas, Texas.



INTERIOR OF POTATO EXHIBIT CAR OF THE CHICAGO NORTH WESTERN RAILWAY.

potato growing in that State, as the climate and soil are well adapted for its cultivation. It is pointed out that the Wisconsin potato must be given individually, must be promoted and packed for market in a manner attractive to both the consumer and trade. This, it is realized, is a grower's not a dealer's proposition, and for this reason the Road is giving the farmers the necessary information, in order that the desired results may be accomplished.

Commissioner of Agriculture for the Denver and Rio Grande.—In a circular issued by Mr. E. L. Brown, vice-president of the Denver & Rio Grande Railroad, announcement is made of the appointment, effective April 1st, of Prof. W. H. Olin, as Commissioner of Agriculture for the Denver & Rio Grande.

This is an entirely new departure for the Rio Grande and marks the beginning of a new era of agricultural development in the territory served by that line.

Professor Olin will devote his entire time to the work, the major portion being employed in visiting the agricultural districts, holding meetings with farmers, giving advice and suggestions as to seed selections, production and markets, and at all times co-operating with persons engaged in agriculture.

Professor Olin is a practical man as well as a scientific farmer and it is confidently believed that the results of his work will be mutually beneficial to the farming communities and the railroad.

ELECTIONS AND APPOINTMENTS.

Executive.

W. J. Besler, president and general manager, Central Railroad of New Jersey.

Murray Carleton, director, St. Louis and San Francisco Railroad.

H. W. Davies, assistant to the president and general manager, Pacific & Idaho Northern Railway. Headquarters, New Meadows, Idaho.

Edward Dickinson, president, Kansas City, Mexico and Orient Railroad.

H. O. Dunkle, assistant to president, the Erie Railroad.

George A. Gaston, president, Northwestern Pennsylvania Railway.

A. S. Greig, director, St. Louis and San Francisco Railroad.

Charles Hansel, chairman, valuation committee, Philadelphia and Reading Railway, and the Central Railroad of New Jersey.

Guy Hopkins, vice-president, Louisiana Western Railroad and Morgan's Louisiana and Texas Railroad & Steamship Company. Headquarters, New Orleans, La.

J. H. P. Hughart, president, Grand Rapids and Indiana Railway. Headquarters, Grand Rapids, Ind.

Felix Jackson, vice-president, Houston and Brazos Valley Railroad.

R. E. Kimball, assistant to president, St. Louis Southwestern Ry.

R. S. Lovett, director, New York Central and Hudson River Railroad.

Charles H. Markham, chairman of the Board, Central of Georgia Railroad. Headquarters, Chicago, Ill.

Santiago Mendez, executive vice-president, National Railways of Mexico. Headquarters, Mexico City, Mex.

Ogden Mills, director, New York Central Railroad.

C. A. Morse, chairman of the Valuation Committee, Chicago, Rock Island and Pacific. Headquarters, Chicago, Ill.

C. W. Nelson, vice-president, St. Louis Southwestern. Headquarters, St. Louis, Mo.

C. E. Schaff, president, Houston and Brazos Valley Railroad.

W. L. Seddon, first assistant to president, Seaboard Air Line. Headquarters, Norfolk, Va.

E. T. Stotesbury, president, Reading Company.

George W. Simmons, director, St. Louis and San Francisco Railroad.

H. W. Stanley, second assistant to the president, Seaboard Air Line. Headquarters, Norfolk, Va.

E. P. Swenson, vice-president, Houston and Brazos Valley Railroad.

J. M. Tomlinson, vice-president, New York, New Haven and Hartford. Headquarters, New Haven, Conn.

Harold S. Vanderbilt, director, New York Central Railroad.

Theodore Voorhees, president, Philadelphia & Reading Railway. Headquarters, Philadelphia, Pa.

William A. Winburn, president, Central of Georgia Railway. Headquarters, Savannah, Ga.

Legal.

Sidney F. Andrews, general counsel, Manufacturers' Railway Company of St. Louis and the St. Louis and O'Fallon Railway. Headquarters, St. Louis, Mo.

Joseph M. Bryson, general counsel, Houston & Brazos Valley Railroad.

Eppa Hunton, Jr., general counsel, Richmond, Fredericksburg & Potomac and the Washington Southern. Headquarters, Richmond, Va.

George Thompson, general attorney, Texas & Pacific Railway. Headquarters, Dallas, Texas.

S. H. West, general solicitor, St. Louis Southwestern Railway. Headquarters, St. Louis, Mo.

Financial.

M. L. Bell, general solicitor, Rock Island Lines. Headquarters, Chicago, Ill.

J. I. Ferguson, assistant paymaster, Indianapolis Union Railway. Headquarters, Indianapolis, Ind.

Thomas C. McCampbell, secretary and assistant treasurer, Tennessee, Kentucky and Northern Railroad. Headquarters, Nashville, Tenn.

George C. Morris, secretary and treasurer, Houston and Brazos Valley Railroad.

Accounting.

C. F. Cater, auditor, South Georgia Railway. Headquarters, Quitman, Ga.

R. J. Dillon, auditor, Houston and Brazos Valley Railroad.

A. R. Down, auditor of freight receipts, New York, New Haven and Hartford Railroad. Headquarters, New Haven, Conn.

A. E. Lock, car accountant, Toronto, Hamilton & Buffalo Railway. Headquarters, Hamilton, Ont.

Alfred Mackrille, assistant general auditor, New York, New Haven and Hartford. Headquarters, New Haven, Conn.

T. M. Prentice, assistant auditor, New York, New Haven & Hartford Railroad. Headquarters, New Haven, Conn.

A. S. Steirer, auditor, Union Terminal Company. Headquarters, Dallas, Texas.

Walter V. Wilson, assistant general auditor, Chicago, Milwaukee & St. Paul. Headquarters, Chicago, Ill.

L. R. Wood, assistant auditor, Oregon Short Line. Headquarters, Salt Lake City, Utah.

Engineering and Mechanical.

Wilbur D. Arter, supervisor of apprentices, New York Central and Hudson River Railroad.

Mark Baer, master mechanic, Colorado, Kansas & Oklahoma. Headquarters, Scott City, Kansas.

F. H. Bagley, signal supervisor, Louisville & Nashville Railroad. Headquarters, Louisville, Ky.

Charles F. Barnhill, division master mechanic, Gulf, Colorado & Santa Fe. Headquarters, Silsbee, Texas.

C. N. Beckner, assistant signal engineer, Louisville and Nashville Railroad. Headquarters, Louisville, Ky.

August F. Blaess, engineer maintenance of way, Illinois Central Railroad. Headquarters, Chicago, Ill.

Daniel J. Brumley, valuation engineer, Illinois Central Railroad. Headquarters, Chicago, Ill.

Louis Chevalier, bridge engineer, Seaboard Air Line. Headquarters, Norfolk, Va.

W. L. Darden, engineer of buildings, Seaboard Air Line. Headquarters, Norfolk, Va.

F. H. Dowler, general agent and superintendent of terminals, Nashville, Chattanooga and St. Louis. Headquarters, Chattanooga, Tenn.

Ellis A. Frink, principal assistant engineer, Seaboard Air Line. Headquarters, Norfolk, Va.

Felder Furlow, in charge of construction department, Southern Railway. Headquarters, Birmingham, Ala.

Henry Gardner, assistant shop superintendent, Mt. Clare shops, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

C. A. Gill, assistant district superintendent of motive power, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

H. L. Gordon, assistant division engineer, Pittsburgh Division, Baltimore and Ohio Railroad. Headquarters, Foxburg, Penna.

Hugh E. Hale, engineer, President's Committee on Valuation, Eastern Group. Headquarters, New York.

C. Harsch, superintendent of terminals, Pere Marquette Railroad. Headquarters, Chicago, Ill.

P. W. Helwig, master car builder, Chicago & Alton Railroad. Headquarters, Bloomington, Ill.

A. C. Hinckley, superintendent of motive power and machinery, Oregon Short Line Railroad. Headquarters, Salt Lake City, Utah.

W. T. R. Hoddinott, acting trainmaster, Baltimore and Ohio Railroad. Headquarters, Philadelphia, Pa.

J. R. Holman, chief engineer, Oregon-Washington Railroad and Navigation Company. Headquarters, Portland, Oregon.

F. G. Hoskins, division engineer, Baltimore and Ohio. Headquarters, Connellsville.

W. F. Hudson, signal inspector, Louisville & Nashville Railroad. Headquarters, Louisville, Ky.

S. A. Jordan, division superintendent, Baltimore and Ohio. Headquarters, Winchester, Va.

C. S. Kirkpatrick, division engineer, St. Louis, Brownsville and Mexico Railroad. Headquarters, Kingsville, Texas.

Patrick Laden, district engineer, Illinois Central Railroad. Headquarters, Chicago, Ill.

E. G. Lane, district engineer, maintenance of way, Baltimore and Ohio Southwestern. Headquarters, Cincinnati, Ohio.

C. P. Lloyd, superintendent of water service, St. Louis and San Francisco Railroad. Headquarters, Springfield, Mo.

A. E. Lock, car accountant, Toronto, Hamilton & Buffalo. Headquarters, Hamilton, Ont.

H. C. Lothholz, engineer of design, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Chicago, Ill.

H. K. Lowry, signal engineer, Chicago, Rock Island and Pacific Railroad. Headquarters, Chicago, Ill.

W. J. P. McGregor, division freight agent, Grand Trunk Pacific. Headquarters, Edmonton, Alta.

W. H. Malone, assistant superintendent locomotive performance, St. Louis and San Francisco Railroad. Headquarters, Springfield, Mo.

E. K. Mentzer, supervisor of bridges and buildings, Boston and Albany Railroad. Headquarters, Worcester, Mass.

M. S. Montgomery, road foreman of engines, Northern Pacific Ry. Headquarters, Duluth, Minn.

C. E. Moyer, general yardmaster, Lehigh Valley Railroad. Headquarters, Manchester, New York.

D. J. Mullen, superintendent of motive power, Cleveland, Cincinnati, Chicago & St. Louis Railway. Headquarters, Indianapolis, Ind.

F. K. Murphy, assistant to the superintendent of motive power, Cleveland, Cincinnati, Chicago & St. Louis Railway. Headquarters, Indianapolis, Ind.

J. B. Myers, district engineer maintenance of way, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

L. C. Ord, assistant master car builder, Canadian Pacific Railway. Headquarters, Montreal, Que.

J. J. Patton, superintendent of terminals, Southern Railway. Headquarters, Knoxville, Tenn.

Philip Petri, division engineer maintenance of way, Baltimore and Ohio Railroad. Headquarters, Cumberland, Md.

R. Preston, assistant superintendent of motive power, Canadian Pacific Railway. Headquarters, Winnipeg, Man.

T. M. Ramsdell, master car builder, Oregon-Washington Railroad & Navigation Company. Headquarters, Portland, Oregon.

W. E. Ricketson, mechanical engineer, Cleveland, Cincinnati, Chicago & St. Louis. Headquarters, Beech Grove, Ind.

C. W. Robertson, general foreman, locomotive repairs, Chicago, Burlington and Quincy. Headquarters, Aurora, Ill.

J. A. Rutledge, roadmaster, Detroit, Toledo & Ironton. Headquarters, Napoleon, Ohio.

J. B. Sheafe, master mechanic, Staten Island lines of the Baltimore and Ohio Railroad. Headquarters, St. George, Staten Island, N. Y.

Charles Silliman, engineer, Southern group, presidents' conference committee federal valuation.

M. K. Tate, master mechanic, Cleveland, Cincinnati, Chicago & St. Louis Railway. Headquarters, Bellefontaine, Ohio.

F. L. Thompson, assistant chief engineer, Illinois Central Railroad. Headquarters, Chicago, Ill.

A. M. Traugott, division engineer of Third and Deepwater Divisions, Virginian Railway. Headquarters, Princeton, W. Va.

F. Von Sprecken, assistant engineer, Atlantic Coast Line. Headquarters, Savannah, Ga.

I. F. White, engineer, maintenance of way, Chicago Great Western Railroad. Headquarters, Chicago, Ill.

R. C. White, engineer maintenance of way, Missouri Pacific Iron Mountain System. Headquarters, Little Rock, Ark.

R. W. Williams, assistant engineer, Alabama Great Southern Railroad. Headquarters, Birmingham, Ala.

P. O. Wood, superintendent, locomotive performance, St. Louis and San Francisco Railroad. Headquarters, Springfield, Mo.

Operation.

P. C. Allen, superintendent, Philadelphia Division, Baltimore and Ohio Railroad. Headquarters, Philadelphia, Pa.

C. A. Anderson, trainmaster, Iowa and Dakota Division, Chicago, Milwaukee and St. Paul Railway. Headquarters, Mason City, Iowa.

W. E. Berner, superintendent, Dakota Division, Northern Pacific Company. Headquarters, Jamestown, N. D.

R. S. Black, assistant superintendent, Canadian Lines, Pere Marquette Railroad. Headquarters, St. Thomas, Ont.

L. W. Bowen, assistant general superintendent, Eastern District, Great Northern Railway. Headquarters, St. Paul, Minn.

G. D. Brooke, superintendent, Ohio Division, Baltimore and Ohio Southwestern Railroad. Headquarters, Chillicothe, Ohio.

A. V. Brown, general superintendent, Central District, Northern Pacific Company. Headquarters, Livingston, Mont.

E. N. Brown, assistant superintendent, Ohio Division, Baltimore and Ohio Southwestern Railroad. Headquarters, Chillicothe, Ohio.

G. Cameron, assistant superintendent, Cincinnati Terminal Division, Baltimore and Ohio Southwestern Railroad. Headquarters, Seymour, Ind.

R. F. Carr, superintendent, Southeastern Division, St. Louis and San Francisco Railroad. Headquarters, Birmingham, Ala.

D. B. Carson, acting general manager, Nashville, Chattanooga and St. Louis Railway. Headquarters, Nashville, Tenn.

William Carswell, superintendent, Great Northern. Headquarters, Marcus, Wash.

F. S. Collins, superintendent, Mobile Division, Southern Railway. Headquarters, Selma, Ala.

Herbert E. Correll, superintendent, St. Louis

Division, Chicago, Rock Island and Pacific Railroad. Headquarters, Eldon, Mo.

W. M. Cowhig, superintendent of freight transportation, Southern Railway. Headquarters, Washington, D. C.

A. J. Currie, superintendent, Quebec, Montreal and Southern Railway. Headquarters, Sorel, Que.

W. H. Davidson, assistant trainmaster, Saratoga Division, Delaware and Hudson Company. Headquarters, Albany, New York.

J. M. Doyle, division superintendent, Great Northern Railway. Headquarters, Havre, Mont.

Stanton Ennes, general superintendent, Western Maryland Railway. Headquarters, Baltimore, Md.

H. Fairmon, trainmaster, Oklahoma Division, Chicago, Rock Island and Gulf Railway. Headquarters, El Reno, Okla.

Henry Gardner, assistant superintendent of shops, Baltimore and Ohio Railroad. Headquarters, Mount Clare, Baltimore.

J. A. Gordon, general manager, Chicago Great Western Railroad. Headquarters, Chicago, Ill.

E. W. Grice, assistant general manager, Chesapeake and Ohio Railroad and the Hocking Valley Railway. Headquarters, Richmond, Va.

H. O. Halsted, assistant to general manager, Pere Marquette. Headquarters, Detroit, Mich.

C. L. Hamilton, trainmaster, Western Division. Pennsylvania Lines West of Pittsburgh, Northwest System. Headquarters, Ft. Wayne, Ind.

T. W. Hansell, assistant district superintendent, Atlantic Coast Line. Headquarters, Sanford, Fla.

C. Harsch, general agent and superintendent, Pere Marquette Railroad. Headquarters, Chicago, Ill.

J. L. Hayes, superintendent, Grand Rapids-Port Huron District, Pere Marquette Railroad. Headquarters, Saginaw, Mich.

J. N. Hicken, trainmaster, Great Northern Ry. Headquarters, Havre, Mont

G. D. Hicks, assistant superintendent, Nashville Division, Nashville, Chattanooga and St. Louis Railway. Headquarters, Nashville, Tenn.

J. A. Hyde, superintendent, Northern Texas Oklahoma Division of the Wells, Fargo & Company Express. Headquarters, Dallas, Texas.

Henry E. Hutchens, superintendent of passenger transportation, Southern Railway. Headquarters, Washington, D. C

Kepler Johnson, trainmaster, Southern Division, Chicago, Rock Island and Gulf Railway. Headquarters, Fort Worth, Texas.

S. A. Jordan, superintendent, Baltimore and Ohio Southwestern Railway. Headquarters, Winchester.

O. B. Keister, superintendent, Knoxville Division, Southern Railway. Headquarters, Knoxville, Tenn.

F. J. Kron, superintendent, Eastern Division, Northwest System, Pennsylvania Lines West of Pittsburgh. Headquarters, Allegheny, Pa.

C. S. Lake, general superintendent, Seaboard Air Line Railway. Headquarters, Portsmouth, Va.

M. F. Leamy, trainmaster, Saratoga Division, Delaware & Hudson Company. Headquarters, Albany, New York.

Elisha Lee, general superintendent, Philadelphia, Baltimore & Washington Railroad. Headquarters, Wilmington, Del.

C. E. Leverich, assistant general superintendent, Great Northern Railway. Headquarters, Spokane, Wash.

B. F. Lilly, general foreman, car department, St. Louis, Brownsville & Mexico Railway. Headquarters, Kingsville, Texas.

C. L. MacManus, supervisor of demurrage for Texas, American Railway Association. Headquarters, Austin, Texas.

H. T. Malcolmson, superintendent, Toronto, Hamilton & Buffalo Railway. Headquarters, Hamilton, Ont.

C. S. Millard, superintendent, Peoria and Eastern Division, Cleveland, Cincinnati, Chicago & St. Louis Railway.

J. W. Mulhern, superintendent, Petoskey Division, Pere Marquette Railroad.

J. H. O'Neill, general superintendent, Western District, Great Northern Railway. Headquarters, Seattle, Wash.

J. L. Otis, trainmaster, International and Great Northern Railway. Headquarters, San Antonio, Texas.

J. F. Patterson, superintendent, Peoria Division, Vandalia Railroad. Headquarters, Decatur, Ill.

Thomas R. Patterson, chief dispatcher, Great Northern Railway. Headquarters, Superior, Wis.

A. C. Peterson, trainmaster, Kansas City Division, Chicago, Milwaukee and St. Paul Railway. Headquarters, Ottumwa Junction, Iowa.

L. H. Phetteplace, general manager, Carolina, Clinchfield and Ohio Railway.

Thomas H. Pindell, superintendent, Alton and Southern Railroad. Headquarters, East St. Louis, Ill.

J. M. Rapelje, assistant general manager, Northern Pacific Company. Headquarters, St. Paul, Minn.

E. M. Reese, assistant trainmaster, Western Division, Pennsylvania Lines West, of Pittsburgh, Northwest System. Headquarters, Ft. Wayne, Ind.

J. E. Roberts, general superintendent and general passenger agent, Greenwich and Johnsonville Railway. Headquarters, Greenwich, N. Y.

C. W. Robertson, general foreman, locomotive repairs, Chicago, Burlington and Quincy Railroad. Headquarters, Aurora, Ill.

R. K. Rochester, division superintendent, Pittsburgh, Cincinnati, Chicago and St. Louis Railway. Headquarters, Logansport, Ind.

F. A. Rutherford, trainmaster, District 26, Grand Trunk. Headquarters, Battle Creek, Mich.

H. H. Shepard, superintendent, Buffalo Division, Delaware, Lackawanna and Western Railroad. Headquarters, Buffalo, New York.

R. E. Simpson, general superintendent, Northern District, Southern Railway. Headquarters, Greensboro, N. C.

Theodore Spieden, assistant superintendent, Chattanooga Division, Nashville, Chattanooga and St. Louis Railway. Headquarters, Chattanooga, Tenn

R. Stephens, superintendent, Wichita Union Terminal Railway Company. Headquarters, Wichita, Kansas.

G. S. Stewart, division superintendent, Great Northern Railway. Headquarters, Spokane, Wash.

Samuel C. Stickney, assistant general manager, the Erie Railroad. Headquarters, New York.

A. K. Stone, trainmaster, Dakota Division, Great Northern Railroad. Headquarters, Grand Forks, N. D.

W. H. Strachan, superintendent, Lake Superior Division, Northern Pacific Company. Headquarters, Duluth, Minn.

W. K. Tasker, superintendent of telegraph lines, Pere Marquette Railroad.

W. G. Templeton, acting superintendent, Huntsville Division, Nashville, Chattanooga and St. Louis Railway. Headquarters, Tullahoma, Tenn.

J. E. Withrow, trainmaster, Toledo Terminal Railroad. Headquarters, Toledo, Ohio.

W. B. Wood, general manager, Grand Rapids and Indiana Railway. Headquarters, Grand Rapids, Ind.

E. M. Wrenne, assistant superintendent of transportation, Nashville, Chattanooga and St. Louis Railway. Headquarters, Nashville, Tenn.

Traffic.

F. G. Adams, commercial agent, Grand Trunk. Headquarters, Winnipeg, Man.

E. N. Altmeyer, assistant dairy agent, Chicago, Burlington & Quincy Railroad. Headquarters, St. Paul, Minn.

W. H. Askew, district freight and passenger agent, New Orleans, Mobile and Chicago Railroad. Headquarte s, Memphis, Tenn.

N. H. Atwood, commercial agent, Missouri Pacific-Iron Mountain Railway. Headquarters, Milwaukee, Wis.

W. N. Bass, traveling freight agent, Carolina, Clinchfield & Ohio Railway. Headquarters, Spartanburg, S. C.

J. Beels, dairy agent, Chicago, Burlington & Quincy. Headquarters, St. Paul, Minn.

H. G. Benedict, general eastern agent, Atlanta, Birmingham and Atlantic Railroad. Headquarters, Kansas City, Mo.

H. R. Bingham, general agent, passenger department, Denver and Rio Grande, Western Pacific, Missouri Pacific and St. Louis, Iron Mountain and Southern. Headquarters, Los Angeles, Cal.

Elbert Blair, commercial agent, Missouri, Kansas & Texas Railway. . Headquarters, Dallas, Texas.

N. H. Brand, commercial agent, Atlantic Coast Line. Headquarters, Ocala, Fla.

W. H. Bremer, traveling freight agent, Central of Georgia Railroad. Headquarters, Cincinnati, Ohio.

Frank M. Byrd, general baggage agent, Indianapolis Union. Headquarters, Indianapolis, Ind.

Edward T. Campbell, general traffic manager, Erie Railroad. Headquarters, Chicago, Ill.

John D. Carter, commercial agent, Atchison, Topeka and Santa Fe Railroad. Headquarters, Detroit, Mich.

Charles L. Chandler, South American agent, Southern Railway, Cincinnati, New Orleans and Texas Pacific Railway, Alabama Great Southern Railroad and the Mobile and Ohio Railroad. Headquarters, Chattanooga, Tenn.

M. J. Clark, agent and general foreman of transfer, Lehigh Valley Railroad. Headquarters, Manchester, N. Y.

E. B. Coolidge, general western agent, Wheeling and Lake Erie Railroad. Headquarters, Chicago, Ill.

B. H. Dally, division freight agent, Vandalia Railroad. Headquarters, St. Louis, Mo.

Randolph Daniels, assistant general passenger agent, Missouri, Kansas & Texas of Texas. Headquarters, Dallas, Texas.

S. M. Dickey, commercial agent, St. Louis Southwestern Railroad. Headquarters, Pine Bluff, Ark.

J. H. Doughty, general agent, St. Louis and San Francisco Railroad. Headquarters, Birmingham, Ala.

F. H. Dowler, general agent and superintendent of terminals, Nashville, Chattanooga & St. Louis Railway. Headquarters, Chattanooga, Tenn.

J. K. Dyer, commercial agent, Lehigh Valley Railroad. Headquarters, Boston, Mass.

C. V. Finkle, agent, Lehigh Valley Railroad. Headquarters, Aldene, New Jersey.

F. G. Fitz-Patrick, passenger agent, Chicago & North Western Railway. Headquarters, Pittsburgh, Penna.

J. E. Fitzwilson, general agent, Southern Railway. Headquarters, New York City.

Lloyd D. Franklin, agent, Lehigh Valley Railroad. Headquarters, Flemingville, N. Y.

Gordon E. Gaines, contracting freight agent, Delaware, Lackawanna and Western Railroad. Headquarters, New York.

J. F. Garvin, general freight agent, Missouri, Kansas & Texas of Texas. Headquarters, Dallas, Texas.

E. Gegenbach, general agent, freight and passenger department, St. Louis and San Francisco. Headquarters, St. Louis, Mo.

H. C. Gettier, commercial agent, Atlantic Coast Line Railroad. Headquarters, Albany, Ga.

John O. Gill, traveling freight and passenger agent, New Orleans, Mobile and Chicago Railroad. Headquarters, Memphis, Tenn.

F. E. Godfrey, assistant general freight agent, Tennessee Central Railroad. Headquarters, Nashville, Tenn.

D. L. Gray, assistant general traffic manager, the Erie Railroad. Headquarters, New York.

Mortimer M. Graham, agent, Lehigh Valley Railroad. Headquarters, Cayuga, New York.

John 'A. Groves, commercial agent, Atlanta, Birmingham & Atlantic Railroad. Headquarters, Kansas City, Mo.

S. J. Henry, assistant general western freight agent, Northern Pacific Railroad. Headquarters, Tacoma, Wash.

George A. Hill, agent, Union Line—Pan Handle Route. Headquarters, Chicago, Ill.

L. C. Hosley, agent, Lehigh Valley Railroad. Headquarters, Gorham, New York.

Samuel M. Howard, freight soliciting agent, Southern Railway. Headquarters, Greenville, S. C.

J. Carroll Hughes, soliciting freight agent, Georgia Southern & Florida. Headquarters, Macon, Ga.

Oliver F. Johnson, division freight agent, Lehigh Valley Railroad. Headquarters, Ithaca, New York.

F. W. Kirkland, freight traffic manager, Florida East Coast Railway. Headquarters, St. Augustine, Fla.

L. D. Knowles, general agent, Missouri Pacific-Iron Mountain, Denver & Rio Grande and Western Pacific Railways. Headquarters, Kansas City, Mo.

W. M. Lampton, general freight agent, Denver and Rio Grande Railroad. Headquarters, Denver, Colo.

M. R. Leahy, assistant general passenger agent, Chicago & North Western. Headquarters, Chicago, Ill.

William M. Long, contracting freight agent, Illinois Central Railroad. Headquarters, Peoria, Ill.

R. R. Losee, agent, Lehigh Valley Railroad. Headquarters, Manchester, New York.

W. M. Lowrie, passenger traffic manager, steamship and railway service, United Fruit Company. Headquarters, New York City.

B. F. McCamey, traveling freight agent, Illinois Central Railroad. Headquarters, Memphis, Tenn.

J. S. McCrea, city freight agent, Lehigh Valley. Headquarters, New York.

W. J. P. McGregor, division freight agent, Grand Trunk Pacific. Headquarters, Edmonton, Alta.

J. A. McTague, contracting freight agent, Delaware, Lackawanna and Western. Headquarters, Minneapolis, Minn.

J. H. Martin, traveling freight agent, Central of Georgia. Headquarters, Macon, Ga.

N. R. Martin, general agent, Lake Tahoe Railway & Transportation Company. Headquarters, Los Angeles, Cal.

G. J. Mitchell, commercial agent, Carolina, Clinchfield & Ohio Railway. Headquarters, Columbia, S. C.

F. S. Montgomery, division freight agent, Vandalia Railroad. Headquarters, South Bend, Ind.

W. B. Morgan, commercial agent, Central of Georgia Railway. Headquarters, Macon, Ga.

L. C. Morris, city passenger and ticket agent, Lehigh Valley Railroad. Headquarters, Rochester, New York.

J. C. Murray, general freight agent, Missouri & North Arkansas Railroad. Headquarters, Eureka Springs, Ark.

R. K. Neilson, freight solicitor, Pennsylvania Railroad. Headquarters, Uniontown, Penna.

Edward F. Neogle, traveling freight agent, Lehigh Valley Railroad. Headquarters, New York.

James T. Nicol, general agent, Waterloo, Cedar Falls & Northern. Headquarters, Cedar Rapids, Iowa.

M. J. Ormond, commercial agent, Lehigh Valley Railroad. Headquarters, New Haven, Conn.

H. G. E. Pansius, contracting freight agent, Delaware, Lackawanna and Western. Headquarters, New York.

H. W. Pinnick, district passenger agent, St. Louis and San Francisco. Headquarters, Houston, Texas.

W. M. Porteous, district freight agent, Canadian Pacific Railroad. Headquarters, St. Louis, Mo.

A. H. Proudfoot, assistant general freight and passenger agent, Liberty-White Railroad. Headquarters, McComb, Miss.

W. C. Ragin, division freight agent, Atlantic Coast Line Railroad. Headquarters, Montgomery, Ala.

M. L. Schultz, commercial agent, Louisiana & Arkansas Railway. Headquarters, Chicago, Ill.

J. E. Scott, traveling freight agent, Carolina, Clinchfield & Ohio Railroad. Headquarters, Columbia, S. C.

L. A. Seubert, agent, Lehigh Valley Railroad. Headquarters, Groton, New York.

Vivian G. Snall, commercial agent, Grand Trunk Railway. Headquarters, Moncton, N. B.

S. T. Stackpole, Canadian freight agent, Pennsylvania Railroad. Headquarters, Toronto, Ont.

J. A. Streyer, general agent, freight and passenger departments, Macon, Dublin and Savannah Railroad. Headquarters, Macon, Ga.

C. B. Sudorough, assistant general freight agent, Vandalia Railroad. Headquarters, St. Louis, Mo.

A. W. Symes, traveling freight agent, Canadian Northern Railway. Headquarters, Toronto, Ont.

Robert Thompson, assistant general passenger agent, Chicago and North Western Railway. Headquarters, Chicago, Ill.

Alexander Tinling, assistant general freight and passenger agent, Northern Pacific Railway. Headquarters, Seattle, Wash.

C. A. Turnell, soliciting freight agent, Nashville, Chattanooga and St. Louis Ry. Headquarters, Chicago, Ill.

L. Van Orden, general agent, Lake Tahoe Railway and Transportation Company. Headquarters, San Francisco, Cal.

H. G. Van Winkle, terminal passenger and ticket agent, Chicago and North Western Railway. Headquarters, Chicago, Ill.

Morris Vinson, traveling passenger agent, Erie Railroad. Headquarters, San Francisco, Cal.

J. D. Watson, assistant freight traffic manager, St. Louis Southwestern Railway. Headquarters, St. Louis, Mo.

G. A. Weller, assistant general freight agent, Ann Arbor Railroad. Headquarters, Toledo, Ohio.

J. A. Werne, New England agent, Southern Railway. Headquarters, Boston, Mass.

J. L. West, freight traffic manager, Missouri, Kansas and Texas of Texas. Headquarters, Dallas, Texas.

Fred Wild, Jr., freight traffic manager, Denver and Rio Grande Railroad. Headquarters, Denver, Colo.

J. A. Williams, chief clerk in general passenger department, Chicago and North Western Railway. Headquarters, Chicago, Ill.

Claude P. Wilson, commercial agent, Missouri, Oklahoma and Gulf Railway. Headquarters, Houston, Texas.

H. W. Winter, agent, Lehigh Valley Railroad. Headquarters, Somerville, N. J.

F. L. Word, live stock agent, Georgia Southern & Florida, the Macon & Birmingham and the Hawkinsville & Florida Southern. Headquarters, Atlanta, Ga.

W. S. Yeatts, special agent, general freight agent's office, Pennsylvania Railroad. Headquarters, Philadelphia.

Railway World

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Important Developments in the Transportation Field

PRESIDENT WILSON ON THE OUTLOOK

President Wilson is of the opinion that the business depression which has affected many interests and thrown thousands of men out of work throughout the country is largely psychological. The accuracy of this statement rests largely upon the method of its interpretation. If the President means that the uneasiness which is so manifest in the minds of business is due to the development of unfavorable business conditions we agree most heartily with him. If, however, he means that unfavorable business conditions are due to an unfounded mental anxiety, then he surely has missed the mark, by a very wide margin.

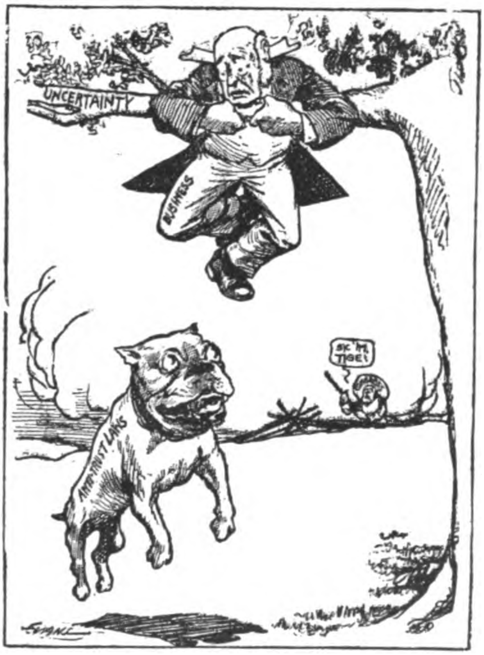
Take the railway situation, for example. Heavier expenses and decreasing revenues have placed the carriers in such a situation as to imperil the solvency of some of them. They have been forced, not through any mental anxiety as to the future, but on account of present necessities, to either discharge or lay off thousands of men and to reduce the salaries of many thousands of others. Nothing psychological about this, except its effect upon the minds of other business men who see in it an inability or unwillingness on the part of the Government to permit the railroads to conduct their plants in an efficient and progressive manner. Then, again the railroads have ceased buying, except under the most urgent necessity. This has had its effect upon practically every other industry, as the railways are among the heaviest purchasers in the country. Nothing psychological about this either, except the creation of a general feeling of uneasiness as to what the future may bring forth.

Now, the psychological aspect of the case, and we admit this exists to a very grave extent, does not rest upon any intangible basis, but upon the development of certain tendencies, largely political, which have had and are having, a very detrimental effect upon business. Unfavorable railway regulative developments, the tariff and the proposed trust legislation, have all wielded a certain amount of influence to bring about present conditions, and the President would indeed be wise, if instead of insisting upon additional trust legislation during the present session of Congress, he would urge that much over-worked body to adjourn, mingle with their constituents for the next few months, and really learn what the people at large need and desire.

Many of our larger and better managed railroads now insist that their officials spend a large part of their time out of their office on the line, so that they may get in touch with actual conditions and, in that way, be able to more intelligently comprehend the conditions which confront them. If this is true with reference to railroad officials, it is certainly more true with reference to Congressmen, who have now been held so long at Washington by an obdurate chief executive, that many of them are rapidly losing their sense of proportion with reference to legislative requirements of business.

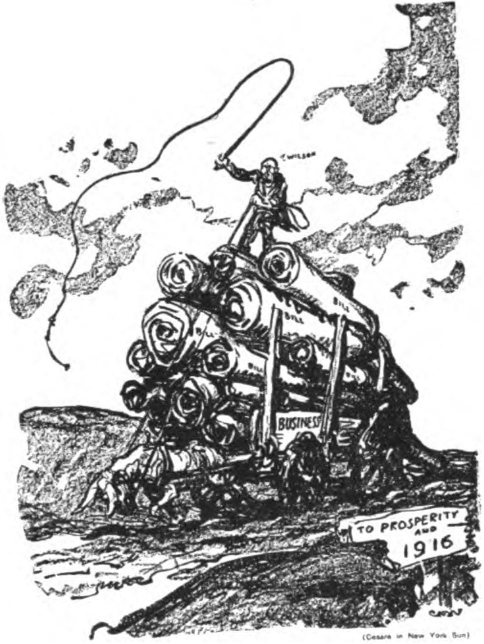
In addition to the proposed trust legisla-

A TIRESOME POSE



Business Man—Why Can't They Call Off the Dog?
—From the Baltimore American.

"Giddap!"



(Cesare in New York Sun)

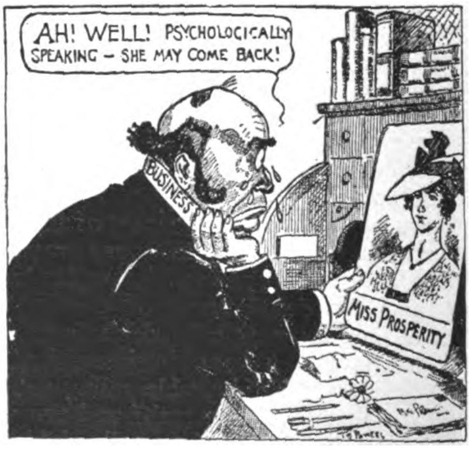
tion, the railway rate situation looms large in the public mind and until some decision has been arrived at by the Interstate Commerce Commission no great amount of confidence in more favorable business conditions may be expected. If favorable, it is generally believed it will prove a mighty factor in restoring public confidence and bringing about more prosperous conditions. There has been such an interminable delay, however, in rendering the decision, that any immediate help from that quarter is almost dispaired of. Not only is it recognized at home but abroad that American railways are not being fairly treated. Many eminent European banking authorities have recently condemned in no uncertain terms the attitude of our Government toward the railroads and a recent statement by Arthur von Gwinner, managing director of the Deutschebank at Berlin, and one of the leading banking authorities in Europe, sums up the situation very clearly. In an address before the American Luncheon Club in that city Herr von Gwinner, who is the Fatherland's leading expert on American railway conditions, made a remarkable plea in favor of increased American freight rates, whch he declared European bankers considered of primary importance for the continuance of American industrial prosperity.

In the course of his address Herr von Gwinner produced some amazing figures illustrating the difference between the rates of the leading systems of Europe. While the Pennsylvania, Baltimore and Ohio and the Chesapeake and Ohio in America charge per ton mile, respectively, .65 cent, .63 cent, and .46 cent, the Northeastern of England charges 2.45 cents, the Prussian State railways 1.33 cents, and the Chemin de Fer Du Nord, France, 1.13 cents. These figures, Herr von Gwinner pointed out were all the more remarkable because American railways were compelled to pay wages twice, sometimes thrice, as large as European systems.

"Such a state of affairs," continued Herr von Gwinner, "is utterly anomalous. It is more than that—it is a deliberate menace to the prosperity of the republic, and because the prosperity of the rest of the world is closely bound up with that of America it is a danger to all of us. Unless ways and means are found to remedy it you are headed straight for an economic calamity."

There have, of course, been various rumors as to what the decision will be. For example, the Chicago *Herald* of June 15th, asserts it is to be in a position to announce the salient points of the decision which it states as follows:

1. The Commission will deny the application for a flat increase of five per cent.
2. However, it will grant increases ranging from one to five per cent and perhaps higher on commodities now transported below cost.
3. It will decline to make advances on certain other commodities.
4. The public will be emphatically warned that the increases ordered do not justify any advance in the prices of food or other necessities.
5. The railroads will be denounced for engaging in a gigantic conspiracy to create


AH! WELL! PSYCHOLOGICALLY SPEAKING – SHE MAY COME BACK!
BUSINESS
MISS PROSPERITY

THE PRIZE WINNER IN A BEAUTY CONTEST
—From the New York Journal.

a public sentiment in favor of the five per cent increase and against the Commission.

Whether the Chicago *Herald* has procured this information from a source more or less reliable or whether it is simply making a clever guess, is an open question, but in view of the fact of the long delay in rendering the decision, it would at least appear probable that the Commission is undertaking an extensive and laborious readjustment of certain freight rates. However, to show how widely divergent the newspaper stories are in forecasting the main features of the decision, the following from the New York *American* of June 18th, which purports to present the main points in the coming decision, is of interest:

(1) Advances will be sanctioned on class rates in Central Freight Association territory, which is between Pittsburg and Buffalo and the Mississippi River.

(2) No advance will be sanctioned on commodity rates in Central Freight Association territory.

(3) No advances in rates will be sanctioned in Trunk Line territory, which is east of Buffalo and Pittsburg.

(4) The Commission will point out to the carriers in Trunk Line territory how they may conserve their revenues by discontinuing certain practices which now prevail.

(5) Pending the outcome of efforts by the carriers in Trunk Line territory to increase their revenues the Commission will hold open the question of an advance in rates for final disposition.

(6) No advance in lake and rail rates will be sanctioned.

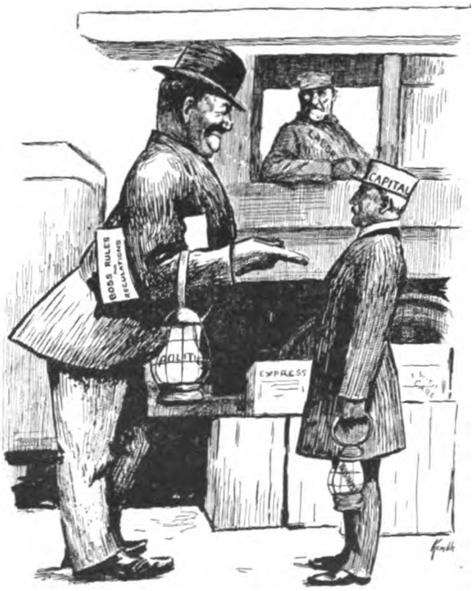
It is stated that the additional revenues which the carriers will receive will be far below the amount they hoped for.

RESTRICTIVE INFLUENCES

No one denies the necessity for Governmental regulation along certain well defined lines both with regard to big business and the railroads. The danger lies in an extension of paternalism to such an extent as to strangle the individual initiative of private enterprise. The country is suffering at the present time from the dread of the possible development of such paternalism. The Democratic party, in spite of the bitter criticism it has subjected itself to, continues its effort to interfere with business to an extent never before attempted, and business is responding by retiring into its shell, where it evidently proposes to remain until the outlook is brighter. To blame the Mexican situation for poor business is to beg the issue, for the uncertainty which has been injected into business through legislative developments under the present Administration, and through the deplorable delay in settling the rate case, are influences which far outstrip the effect of Mexican developments.

Railroads in particular have suffered from this feeling of uncertainty and the talk of eventual Government ownership has not helped to relieve the situation. Notwithstanding the experiences of many countries in which Government-owned railroads have failed to give satisfactory service to the public and in fact has placed a burden on their shoulders which is fast becoming unbearable, political leaders are still trying to make capital out of what they consider the sentiment of the people in favor of Government ownership.

Railroad officials not only believe but know that this would be one of the worst calamities which could befall the country. To offset this tendency they must be both alert and aggressive and should be willing to make every legitimate effort to keep the public informed regarding the true state of affairs. Publicity must be the future key-



How Long?

THE DEMAGOGUE: "Say! You're not running this railroad business to suit me, so you get out and I'll run it to suit myself, see?"

Drawn for Leslie's by E. W. Kemble

note of railway progress and the successful railway executive of the future will be the one who is as willing and able to enter the public arena in defense of the entire industry, as to direct his own company's operating activities.

The latest evidence of the failure of Government-owned railroads comes from no less an authority than Theodore Roosevelt. In an article published in the *Outlook* of May 23d he refers to the Government-owned railroads of Chili in the following manner:

> "When the time came for us to leave Chili, we went southward on the railway to Puerto Veras. Incidentally I may remark that the railways in Chili are owned by the State, and that the men I met who are the best informed and most trustworthy express great regret that they had not been kept in private hands.
>
> "These men stated that there was always a deficit in the management of the railways and that they were a burden on the Government and unprofitable to the citizens generally."

In Europe, as heretofore noted in these columns, Government ownership in the great majority of instances, has proved anything but satisfactory, and, as a panacea for private ownership, has developed into a lamentable failure. An editorial appearing in the London *Economist* of February 14th, is very illuminating as to Government ownership in its application to the Belgium State Railways.

To quote from the editorial:

> "Passengers have been delayed for hours: goods have been detained in transit for three or four days, or even a week, and the steps taken to meet the difficulties have in some respects made them worse. Thus, all consignments from certain selected stations have been held back for twenty-four hours to let other traffic pass, and a number of trains on certain lines have been temporarily—and suddenly—taken off, even on important trunk routes.
>
> "The railway authorities find their excuse in the sharp frost, which has caused the canal traffic to be diverted to the railways, and set up a shortage of trucks, besides blocking the lines with traffic. But **their failure to cope effectively with their difficulties has revived the outcry against State management and the demand for a change.**
>
> * * *
>
> "The railway accounts, it is alleged, are not published in an intelligible form; items belonging to them have to be collected from different estimates; the administration is over-centralized, the staff is too large, and the heads of the various departments have not sufficient responsibility or power of initiative.
>
> "There is too much red tape; promotion depends on political consideration as well as on efficient service; and it may be remembered that during the general election of 1911 the Government was charged with making special concessions at the last moment to the railway men in regard to pay and other advantages in order to secure their votes.
>
> "It is stated, too, that there is not enough rolling stock, and that the fares and rates, which are extraordinarily low (and probably are directly unremunerative) for tourist traffic and for some classes of through freight, are a good deal less liberal for local traffic."

Switzerland also appears to be having its troubles. Harold Cox, one of the leading public men of England, writing in the London *Daily Graphic* of January 20th, thus describes, in part, the railway situation in Switzerland:

> "If State purchase of railways could be a success anywhere it would be in Switzerland, for the Swiss Government possesses advantages which are denied to larger countries. It is not cursed by the party spirit which prevails in England, nor by the Ministerial instability which is so injurious to France. The Swiss Government, like the Swiss people, is both prudent and patriotic.
>
> "Yet, when the results of railway nationalization in Switzerland are compared with the promises made in advance it is impossible to avoid the conclusion that **the experiment has been a failure."**

Mr. Cox goes on to say that instead of the personnel being reduced as promised it grew rapidly from the time the railroads were taken over in 1898 to 1909, developments in this particular became so serious that the Swiss Parliament appointed a Committee of Inquiry. This committee reported "that one of the main causes in the deficit of the railway situation was the plethora of the personnel." As the result of this report, drastic steps were taken to reduce the number of employes, but notwithstanding these efforts, the personnel still remains far in excess of the standard found necessary by the companies.

As regards the rates and fares charged to the public, the experience of the Swiss railways has been equally unfortunate, and while rates were reduced in 1901, it was found necessary in 1909, to again raise many of them. Again, at the beginning of Government ownership, new trains were added with a lavish hand, but by 1908, the unsoundness of this proceeding was admitted and in 1909, the head of the railway administration denounced "the insatiable appetite of the public" for additional trains and declared that the administration had not been able to resist pressing demands from which it was constantly assailed from local and federal authorities.

As regards the payment of employes the story appears to be the same. The administration began by making large readjustments of wages in order to carry out promises made, but very soon the demands put forward by the staff were found to be intolerable and further concessions were refused. The employes at once complained that they had been deceived, and that they were worse off than they had been under the companies and this complaint is still constantly repeated and it is further alleged that promotion depends on political favoritism.

In France, conditions under Government ownership could hardly be more deplorable. Since the State purchased the Western Railway in 1905, the advances to capital account for that system and for the old State Railways have reached the enormous total of 718,500,000 francs. This, it should be understood, however, is only a part of the drain which the Government has made upon the French treasury, for these advances were entirely outside the deficits due to the operation of these railways.

These treasury advances will have to be funded ultimately and that is one of the troublesome problems of French finance. The railways have been required to pay only 2½ per cent for this accommodation, while the obligations placed with the public call for 4.75 per cent interest, or nearly double the charge by the treasury.

It is further to be noted that no interest at all was paid upon treasury advances from January 1, 1909, to December 31, 1911, so that the sum which should have been paid must be added to the deficit to ascertain the exact amount of the losses due to State operation.

It is thus plain that not military expenditure alone, but reckless and improvident railroading, is responsible for French financial embarrassments.

In addition to these deplorable financial results, the operation of the French-owned railroads, presents an example of incompetency which it would be hard to equal in any civilized nation on earth. Intolerable service delays are the rule rather than the exception, and one need only to examine the files of the leading French newspapers of the past two or three years to appreciate how woefully lacking Government ownership of railways in France, has been, and how welcome would be the return to private ownership.

EFFECT OF RATE INCREASE ON EARNINGS

An interesting leaflet has been published by Messrs. L. F. Rothschild and Company, members of the New York Stock Exchange, entitled "Statistical Analysis of the Effect of Freight Rate Advances on Earnings of Twelve Railroads in Eastern Classification Territory."

The purpose of the compilation is to segregate the revenue to which the advance is applicable from the total operating revenues, and to then apply the proposed advance of five per cent to the revenue which would be affected, indicating the amount of the advance and the percentage of same of the total common stock of each road; also indicating the percentage of total operating revenue which would be effected by the advance.

The results are brought together in condensed tabulated form below, which is of interest as showing the effect of the proposed advance upon the twelve roads which have been selected.

Railroad.	Revenue to which advance is applicable.	Amount of revenue to be derived from 5% increase.
B. & O.	$79,087,845	$3,954,392
Erie	32,377,628	1,618,881
N. Y. C. & H. R.	64,495,126	3,224,756
Pennsylvania	127,664,818	6,383,240
Ches. & Ohio	27,549,696	1,377,490
Del. & Hudson	8,678,916	433,946
Del., Lacka. & W.	15,089,058	754,453
Lehigh Valley	16,339,749	816,987
N. Y., Int. & W.	2,659,256	132,963
Phila. & Reading	25,231,023	1,261,550
Norf. & Western	37,588,024	1,879,401
N. Y., N. H. & H.	34,071,975	1,703,599

Railroad.	Percentage which increased revenue bears to total common stock.	Per cent of total operating revenue effected by 5% increase.
B. & O.	2.60	78
Erie	1.44	52
N. Y. C. & H. R.	1.43	55
Pennsylvania	1.28	69
Ches. & Ohio	2.20	75
Del. & Hudson	1.02	35
Del., Lacka. & W.	1.79	37
Lehigh Valley	1.35	38
N. Y., Int. & W.	.23	27
Norf. & Western	1.80	50
Phila. & Reading	1.88	86
N. Y., N. H. & H.	.95	50

RAILWAY MAIL PAY DEVELOPMENTS

The railway mail pay situation has become intolerable. Not only has the Post Office Department and Congress failed to provide relief for the grave injustice under which the railroads have been laboring for many months on account of the increased burden imposed upon them by the parcel post but the "Moon Bill" now before Congress would if passed, actually reduce the pay of the railroads for carrying the mails by about $10,000,000. It is little to be wondered at that a growing number of newspaper editors are accusing the Government of not only dishonorable but dishonest practices where the railways are concerned. At the present time, through an entirely unnecessary delay and a neglect of a direct and plain duty, the Government is as clearly robbing the tills of the railways, as if they had engaged professional thieves to perform the job. In the meantime, certain Government officials are boasting of the increased net earnings and the splendid showing made by the Post Office Department. Truly this is a shameful spectacle.

Ralph Peters, chairman of the Committee on Railway Mail Pay, has issued the following statement regarding the proposed new railway mail pay legislation as incorporated in the Moon bill:

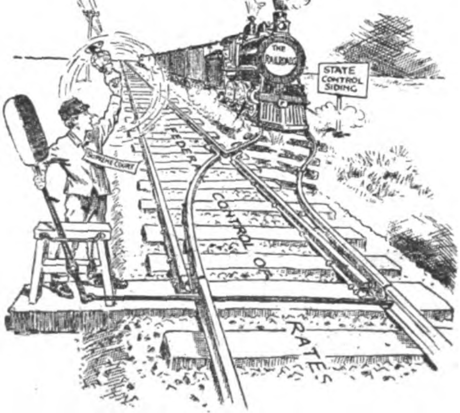
"The Rules Committee of the House of Representatives has, I am informed, adopted a recommendation that the so-called 'Moon Bill' follow the Sundry Civil Appropriation Bill now being considered by the House. The underlying principle of the Moon bill is to reduce the pay of the railroads for carrying the mails by about $10,000,000.

"Congress some time ago appointed a Joint Committee of which former Senator Jonathan Bourne, Jr., of Oregon, is the chairman, to investigate the whole subject of railway mail pay and recommend to Congress the proper method which should be adopted. That Commission has conducted a most exhaustive investigation but has not yet reported although it intends shortly to do so.

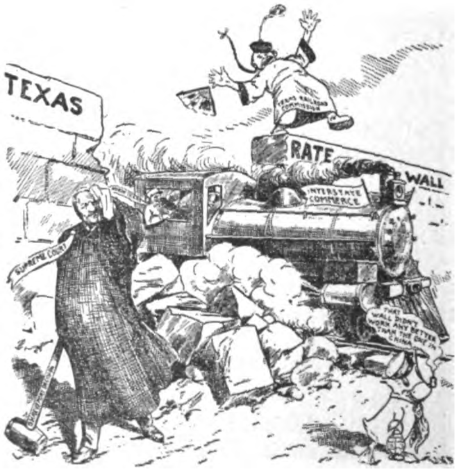
"The railroads have, I believe, proved conclusively to the committee that they were certainly not overpaid for carrying the mails, but were, as we see it, underpaid by at least $15,000,000 annually. In making his closing argument on the Five Per Cent Advance Rate Case, Mr. Brandeis, as its special counsel, advised the Interstate Commerce Commission that to him it seemed clear that the railway mail service was unremunerative to the railways.

"At the instigation of the Post Office Department which has, we feel, been grossly unfair in all questions relating to compensating the railroads for carrying the increased burden of the parcel post, and before the Joint Congressional Committee has rendered its report, Congressman Moon has introduced the bill which revises the methods of paying the railroads in such a manner as to reduce by about 20 per cent the compensation now paid to the railroads.

"This proceeding not only seems highly inappropriate in advance of the recommendation of the Congressional committee, but in itself proposes an imposition upon the



Letting 'em Out on the Main Line.—*Philadelphia Record.*


TEXAS
TEXAS RAILROAD COMMISSION
RATE
WALL
INTERSTATE COMMERCE
SUPREME COURT
THAT WALL DIDN'T WORK ANY BETTER THAN THE ONE IN CHINA

—*New Orleans Times-Picayune.*

railroads which is without warrant and is in the highest degree unjust. It cannot be that such a plan will have the support of the American people when the people realize what the plan actually means."

BRITISH RAILWAYS MAY DEMAND FURTHER RATE INCREASES

According to a statement received from the Bureau of Railway News and Statistics at Chicago, English railways may be forced into applying for further advances in their rates in addition to the four per cent increases granted last year. Advices received by the Bureau of Railway News and Statistics state that so far have the increases already awarded fallen short of compensating the companies for higher working expenses due to rising wages and costs of materials, that the carriers are confronted by the alternatives of cutting off the less remunerative facilities now furnished the public or following the example set by Eastern railroads of the United States in applying for permission to raise their rates beyond the present maxima.

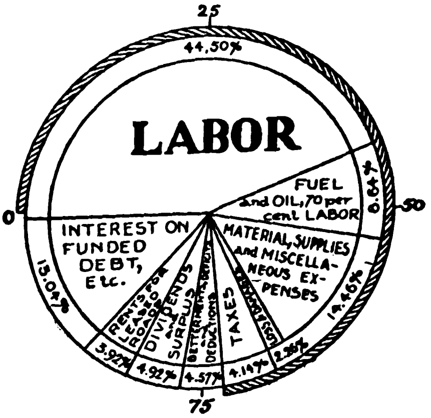
Relief afforded to the companies by last year's four per cent increase, it has been found, is only partial. Advances were applied only to such rates as could be raised within the Parliamentary maxima, many being already up to the maximum. Many of those below the maxima, moreover, could not be raised for one reason or another. Hence the London and North Western estimates that the benefit it has obtained equals not more than one half its increased expenses; the Midland and the Great Central declare the increases do "not nearly compensate" for the concessions made and the Lancashire and Yorkshire states that increased labor costs which it must meet are "considerably more than double" any advantage it has gained. Other companies make similar statements.

English railways have shown a uniform reflection of American experience in that although gross revenues were greatly enhanced in 1913 an excessive rise in expenses wiped out the advantages which should have resulted. Wages account for most of this. The London and Northwestern labor bill in 1913 showed an advance of about $2,500,000 of which $1,500,000 was the direct cost of extra wages paid. The Great Western estimates the concessions it has made to its staff since 1911 at $1,250,000 per annum. The North Eastern estimates the cost of its wage concessions in the next two years will be $1,500,000 a year, equal to a dividend of one per cent on its consols. On the Midland the increase in wages and salaries in separate departments include: Enginemen, $290,000; maintenance of way, $95,000; maintenance of equipment, $115,000, and traffic $375,000. The Lancashire and Yorkshire wages bill has been increased $650,000 per annum; that of the Great Central, $1,135,000; of the London, Brighton and South Coast, $250,000; of the London and South Western, $250,000; of the Caledonian, $650,000, and of the Glasgow and Southwestern, $165,000.

The increase in cost of coal to various companies in 1913 was: London and North Western, $1,100,000; North Eastern, $850,000 (of which $600,000 was due to higher price, and $250,000 to increased consumption); Great Western, $625,000; Midland, $700,000; Great Central, $610,000; Lancashire and Yorkshire, $460,000, and Great Northern, $425,000. Prices of all materials required by the Lancashire and Yorkshire in 1913 had increased by about ten per cent. For oil used in manufacture of oil gas alone the Great Western had to pay $60,000 more in 1913 owing to advance in price.

The total of taxes paid by British railways in 1912 was $25,645,000, an increase of $250,000 over 1911 and $3,180,000 over 1903. This item is steadily increasing and is considered the more hopeless for the railways because the advance is in the rate per pound income over which the companies

The Railway Dollar



—and what became of it in the fiscal year ended June 30, 1913, as computed by Slason Thompson.

have no control and not in increased assessments. The London, Brighton and South Coast paid in taxes, government duty and national insurance more than one third of its yearly profits.

On top of this abnormal advance in expenses increased difficulties have been met in the form of declining traffic, similar to that which has occurred in the United States. Traffic returns of nine of the principal companies for the first 19 weeks of the current year show a decline in receipts from freight traffic of nearly $2,500,000.

THE INCREASED COST OF FREIGHT MOVEMENT

The Lehigh Valley Railroad has recently compiled some interesting figures tending to show that the cost of hauling freight has doubled in the past fifteen years and that this increase has been met, so far as possible, by employing larger cars, longer trains and careful railroading methods. In spite of all the carriers could do, however, the cost has mounted so rapidly as to far outstrip the results which have been obtained through greater economy; so that the only solution to the present difficulty appears to be an increase in freight rates. To quote from the statement prepared by the Lehigh Valley:

> "A fair example of increased cost is the price of freight cars. Fifteen years ago a freight car, on an average, cost $419.66. Now it costs $979.49, considerably more than twice as much. The yearly cost of repairs and renewals fifteen years ago was $31.69. Now it is $70.06, again more than double. To ure railroad phraseology and get at the unit comparison, hauling freight per 'car mile' cost $.0046 fifteen years ago, and now its costs $.0088.
>
> "Freight locomotives cost $25,000 to-day. Fifteen years ago they cost $15,000. And the cost of repairs and renewals has increased from four to ten cents per mile. Over the same period wages have increased 25 per cent.
>
> "All there is to offset this great increase, is careful management. The new freight cars hold one-fourth to one-third more than the old ones and the average tractive power of freight engines has increased one-third. Careful routing and a close check on all train movements has been necessary. There is no system of business management that can offset an increase of over 50 per cent in costs, but the railroads are asking the Interstate Commerce Commission for an increase of only five per cent in freight rates."

INCREASING THE TRAINLOAD

Some interesting figures were given by Louis D. Brandeis as special counsel for the Interstate Commerce Commission in the closing brief which he filed in the Eastern Advance Rate Case. While Mr. Brandeis infers that there is still room for further economies in various ways, he at least clearly recognizes that the carriers have accomplished great results in the direction of overcoming the increased cost of labor by increasing the carload and trainload.

The brief cites that through the introduction of powerful locomotives and cars, and by eliminating heavy grades and curves, the average load per loaded car was increased from 19 tons in 1903 to 22.08 tons in 1912, or 19 per cent. The average freight trainload was increased from 312 tons in 1903 to 501.8 tons in 1912.

On the Pennsylvania Lines East the loaded freight car was increased 15 per cent between 1903 and 1912, and during the same period the average trainload was increased from 491.4 tons to 613.5 tons, or 24 per cent.

The Baltimore and Ohio Railroad increased its average load per loaded car from 21.4 tons in 1903 to 26.7 tons in 1913, or 25 per cent, and its average trainload was increased from 418 tons to 650.81 tons, or 55 per cent during the same period. Referring to the Baltimore and Ohio, Mr. Brandeis notes in his brief that from 1910 to 1913 the ton miles increased 18.6 per cent while freight train mileage decreased 15 per cent. It is likewise cited that the average capacity and the average load of freight cars had each been increased about 10.8 per cent on the Baltimore and Ohio and that the consumption of coal per 100 ton-miles decreased 9 per cent, so that while the price of coal was higher in 1913 than in 1910, the coal cost per ton mile in freight service was overcome.

The New York Central increased its carload 17 per cent between 1903 and 1912 and its average trainload was advanced 18 per cent. The Norfolk and Western at the same time increased its carload 29 per cent and the trainload 42 per cent.

RAILWAY CAPITALIZATION AT HOME AND ABROAD

It is, of course, well known among railway men and to a certain extent by the general public, that capitalization per mile of line in the United States is smaller than in any other country. This fact, however, has been brought out in an unusually striking manner in a recent bulletin published by the Bureau of Railway News and Statistics which shows that while the United States railways of 1912 comprised more than one third of the total mileage of the earth, their capital represented but little more than one fourth of the entire investment in the world's railways. In other words, the average capital per mile of United States railways was only slightly over three quarters the average per mile of the entire world.

According to the Interstate Commerce Commission's figures, the total capitalization of the United States railways is $15,000,000,000, or $63,944 per mile. As the following compilation shows, this places the United States eighteenth in the list of countries in order of capital per mile though by a margin of more than 200,000 miles first in point of mileage.

1.	England	$269,496
2.	Belgium	189,023
3.	France	143,435
4.	Brazil	142,080
5.	Italy	124,116
6.	Austria	120,311
7.	Switzerland	117,953
8.	Germany	116,661
9.	Roumania	88,937
10.	Spain	88,368
11.	Japan	84,301
12.	Russia	83,496
13.	Holland	82,796
14.	Servia	73,373
15.	Hungary	69,084
16.	New So. Wales	65,989
17.	Algiers	64,019
18.	United States	63,944

CAPE COD CANAL CUT THROUGH

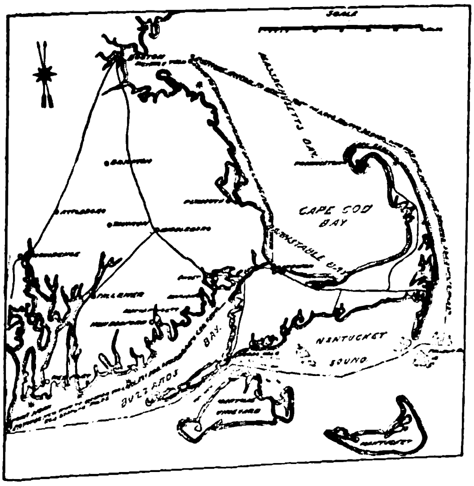
On April 21, Cape Cod, Massachusetts, became, in fact, an island. The waters of Massachusetts and Buzzard's bays met for the first time on that date, when the last dike in the Cape Cod Canal was removed. By July of this year the canal will be navigable for vessels drawing not over 12 feet. The officials announce that they expect to have 15 feet through the canal long before August 24. The canal has no locks. The length from the shore of Massachusetts Bay to the shore of Buzzard's Bay is eight miles; the length from a thirty foot line in either bay is thirteen miles; the minimum width of the bottom will be one hundred feet except at passing places where it will be two hundred feet.

This cut of eight miles will reduce the length of the water journey from New York to Boston from 326 miles via Pollock Rip to 260 miles via the canal through Long Island Sound. The distance from New York to Bostan via Nantucket Light is 402 miles. It will thus be seen that the economy in distance is very marked. Not only will the canal affect a large proportion of all Atlantic Coast shipping but it will also affect shipping from New York to Boston.

The factor of safety in addition to shortened passage must also be taken into consideration. It is estimated that 25000 craft round Cape Cod every year, exposed to the risks of the outside passage. The canal is to have continuous illumination on the street lighting plan.

The economies of the canal are expected to be very marked. The average delay each round trip for barges and schooners taking the outside route is nearly four days. This means a loss in money of 10 cents per ton on the seven million tons of coal and lumber carried by tows and sailing craft. The total amount of coal and lumber carried by steamers is 4,500,000 tons on which nearly the same amount per ton would be saved.

The canal from both ends can be approached without any influence of current



Location of Cape Cod Canal.

and will enable barges and tows to more nearly approximate schedule time than has ever been possible hitherto.

The Cape Cod Canal is a private enterprise, executed by the Cape Cod Construction Company of which August Belmont is president, and William Barclay Parsons the chief engineer. About $12,000,000 has been expended on this enterprise.

THE GROWTH OF THE INTERSTATE COMMERCE COMMISSION

Perhaps nothing so strikingly indicates the tremendous growth in the activities of the Interstate Commerce Commission as a comparison between the early requirements of that body both as to working force and appropriation and similar requirements at the present time.

In the second annual report of the Commission for the year ending June 30, 1888, the appropriation by Congress for salaries and expenses of the Commission was $125,000, and of this amount $113,007.59 was expended. At that time the Commission consisted of:

Commissioners	5
Secretary	1
Auditor	1
Stenographers	2
Clerks	26
Messengers	3
Total	38

The appropriation for the year ending June 30, 1893, was $225,000, and the amount expended $217,792.33. At that time the Commission consisted of:

Commissioners	5
Secretary	1
Auditor	1
Asst. Auditor	1
Statistician	1
Asst. Statistician	1
Docket Clerk	1
Law Clerks	4
Clerks	91
Stenographers	11
Special Employes	2
Typewriters	7
Messengers	8
Total	134

The report for the year ending June 30, 1913, shows the total appropriation to be $1,853,629.03, which is divided as follows:

For salaries of Commissioners and Secretary	$ 75,000.00
For general expenses in the execution of the laws to regulate commerce	1,000,000.00
To enforce compliance with Sec. 20 of the act to regulate commerce as amended by the act approved June 29, 1906, including the employment of necessary special agents or examiners	300,000.00
For the payment of all authorized expenditures "to promote the safety of employes and travelers upon railroads by compelling common carriers engaged in interstate commerce to equip their locomotives with safe and suitable boilers and appurtenances thereto"	225,000.00
To enable the Interstate Commerce Commission to keep informed regarding compliance with acts to promote the safety of employes and travelers upon railroads, including the employment of inspectors	150,000.00
To enable the Interstate Commerce Commission to investigate in regard to the use and necessity for block-signal systems	3,629.03
Deficiency appropriation to provide for the valuation of property of the carriers	100,000.00

Of the total of $1,853,629.03 appropriated for the fiscal year ending June 30, 1913, there was expended $1,560,404.21.

According to the annual report of the Commission published for the year ending June 30, 1913, the total number of the staff of the Commission which were in its employ during all or a part of that year was 859, and consisted of the following:

Commissioners	7
Secretary	1
Statistician	1
Associate Statisticians	3
Disbursing Clerk	1
Cashier	1
Chiefs of Divisions	10
Asst. Chiefs of Divisions	6
Solicitor	1
Asst. Solicitor	1
Attorneys	32
Examiners	75
Law Clerks	3
Special Agents	11
Clerks	501
Inspectors (Loco. Boilers)	53
Other Inspectors	37
Miscellaneous Employes	50
Messengers	60
Engineers (Valuation)	5
Total	859

Contemporary Opinion

A "Call to the Colors" for the Railroad Army.

(From the May issue of the "Railway Employes' Journal," Official Organ of the Brotherhood of all Railway Employes.)

THIS is a "call to the colors" for all of you railroad workers of the United States—a call to arms for your defense against your worst peril, against evils as bad as any war upon your country could bring you.

Two millions of you, brother railroad workers, live solely on the railroad pay car and pay envelope. All you get and all your families get is what you earn by your toil for railroads.

You prosper when the railroads prosper; you suffer when the railroads suffer. Good times for the railroads are good times for you; hard times for the railroads are hard times for you.

Take notice, too, that you prosper first and suffer first. The first glint of railroad good times brightens your condition; the first pinch of railroad hard times grips you. The axe of economy strikes first, hardest and most frequently at the pay roll, and that is where and how you live.

Yours is the greatest business in the nation bar only agriculture. The farmer raises and sells hundreds of things; you make and sell one thing—transportation.

Two millions of you in one calling, with one interest, one aim, one resource—there is no army of industry anywhere that is anything like yours in numbers, in singleness of interest, in potential power.

You need to do something now. Your common and single interest is in distress. Hard times are upon it and upon you—and they will be worse unless something is done now, and only you can do it. Everybody else has tried everything else. What needs to be done you must do with all your gigantic united strength.

Your enemy is the self-seeking politician, the demagogue, the fanciful theorist. They have put your tremendous industry on the rocks and you with it. Some want—or say they want—"regulation," and after that more "regulation." Some want government ownership—and that and bankruptcy are the only alternatives if they keep on with their wrecking. Bankruptcy for the roads means ruin for you. Government ownership means $388 a year for you, as in Germany, or $260, as in France, or $196, as in Russia—and the privilege of touching your cap when the gentle-folk go by!

Your industry is the backbone, the heart and the lifeblood of America's progress and commercial greatness. It has pioneered the wilderness and peopled the waste places; it has long since moved the frontier of commerce from the Missouri River westward to the Pacific Ocean; it, and it alone, has made American opportunity equal to American genius and enterprise.

And for twenty years your great industry has been the target, the victim, the prey of unconscionable scoundrelism, masking now as "reform," now as "regulation," now as "progress."

For twenty years the politician, the demagogue, the theorist have been clutching the throat and tearing at the vitals of your industry. In that time the price of everything men make and sell has gone steadily up—everything but the one thing you make and sell—transportation.

In twenty years the rate-reducers have remitted, by one process and another, four billion dollars in freight charges, and none of that—not a penny—has gone to the dear consumer. In that same time the makers and sellers of all other commodities have boosted their prices on the average 33 1-3 per cent. Up with every other industry; down with your industry!

In twenty-five years your industry's taxes have climbed from twenty-seven millions to one hundred and twenty-nine millions, or 367 per cent; the rate per mile has grown from $197 to $532, or 197 per cent.

For a quarter of a century the wreckers, at Washington and at every state capital, have been cinching, hammering, hampering your industry, lowering its rates, raising its expenses, loading it with costly restrictions.

They have got it down so that your industry, giving the best service in the world, gets the poorest returns. And they are still cinching your industry, hammering it, hampering it.

And now what had to happen some time has happened. The inevitable consequences have arrived. You can see them and feel them all over your industry. Hundreds of thousands of you are out of work. Other hundreds of thousands are on reduced time.

Unless you protect yourselves by protecting your industry there will soon be many more of you who can put idle hands into empty pockets and try to forget about your own empty bellies while you think about the full bellies and full pockets of your enemies, the politician, the demagogue and the theorist.

Two millions of you, and each one has, or can have, a vote—enough of you to turn anybody into or out of any office in the land. Individually you are, unless you choose to be otherwise, pretty important and influential citizens; collectively you are invincible in the nation and in almost every one of its towns, cities, counties and states. Pulling together, you can make any legislature, even Congress itself, take strangling hands off your industry and give it the same fair chance and square deal every other industry gets..

There are enough of you in Iowa, North and South Dakota, Missouri, Nebraska, Kansas, Oklahoma and Arkansas to make the administrations of those eight states send Mr. Clifford Thorne back home to attend to whatever occupation he has besides that of harassing your industry.

In Wisconsin there are enough of you to make Senator La Follette understand that your industry is not bad merely because it is big; that he will not get any more or higher honors by seeking to deny to your industry the justice accorded to all others.

In Iowa, again, you can convince Senators Kenyon and Cummins that the price of baiting your industry will be your votes and their jobs.

In his Illinois district you can show Congressman Fitz Henry that there is no more political profit to be had in jamming your industry—that the end of twenty years of demagogism is at hand and with it the end of careers of statesmen who have no other platform.

You have the right to know what every office-holder and every office-seeker intends to do by your industry. Exercise it. Ask them. Demand to know. If they do not answer right, serve notice on them that war is declared. Tell them they have no chance for election or re-election unless they give your industry and you a chance to live.

As individuals and collectively, alone and in all your organizations, come to the colors for the salvation of your industry, whereby you and your wives and children live. When the men of other industries see what you are doing they will stand with you—and, if they only knew it, it is the long strangling and starving of your industry that is rapidly making all their industries lean and hungry.

Don't humbly request. Don't petition. Make demands and enforce them. This is a fight, so hit, and hit hard. Take up the strong arms of your votes and your citizenship for your right and your chance to live. Begin with your supervisor or alderman, tackle your legislator, and make war all the way up to Congress and Washington.

All you want is as fair a deal for your industry as other American industries enjoy. You must have that to live, to be sure of full work at full pay. You are entitled to it. Get it.

A Time to Fight.

(From "Leslie's Weekly.")

THE world loves a fighter. It has little respect for the man who, when smitten on one cheek, turns the other to the smiter also. One who does not resent a wrong is looked upon either as weak or cowardly. Even a bad cause wins a following if it has a fighter at its head.

The railroads of this country have had every man's hand against them. The Interstate Commerce Commission has slapped them in the face, the Post Office Department has robbed them by adding to the weight and costs of mail transportation without extra pay, State Legislatures have passed full crew bills imposing unnecessary burdens on the railways without right or reason, and the attorney general's department at Washington has sought to dismember systems whose strength lay in their unity and whose dismemberment meant their ruin.

Meanwhile what have the railroads done? They have yielded meekly to abuse, to robbery and oppression. They have been so cowed by the terrific onslaught of the muckrakers and persistent hammering of the demagogue that no spirit of resistance has remained. The worm will turn. The most wholesome sign of the times is found in the militant attitude of the Pennsylvania Railroad, voiced by President Rea, at the recent annual meeting of its stockholders, when he said that hereafter the management of that company was determined to allow no statement reflecting on it or on the integrity of its officers to go unchallenged. Good!

All over this country the people are rising in resentment against the unfair treatment the railroads are receiving. The people of Connecticut, and in fact throughout New England, are determined to give the new management of the New Haven Railroad fair play. "The stockholders have suffered enough," says ex-Lieutenant-Governor Blakeslee of New Haven. They propose to fight the government's efforts to compel the New Haven to give up the Boston & Maine and other holdings. On the Pacific coast every chamber of commerce is entering a united protest against the absurd demand of the department of justice that the Southern Pacific shall give up control of the Central Pacific.

Bills for the repeal of the "full crew" laws are now being urged upon the legislatures of New York, New Jersey and other States, though these laws were passed only a year ago. Behind this demand stand the security holders of the railroads. Organized, they can accomplish all that they seek, for at heart the people are fair-minded. It is only necessary to expose the injustice of a situation to secure relief.

The working masses are having the real truth driven home to them by the wholesale discharge of railway employes going on throughout the country under the compulsion placed on the railroads to cut their expenses "to the bone." President Willard of the Baltimore & Ohio Railroad sorrowfully states that six thousand of the employes of that railroad have been laid off during the past year. It is estimated that 25 per cent of the workmen in the railroad shops in the East and from ten to fifteen per cent in other sections are idle. Who will care for these employes? Will the Interstate Commerce Commission? Will the department of justice? Will all the politicians catering to class voters in our legislatures and at the national capital?

The people are thinking of these things. They are discovering the impressive fact that a demagogue never filled a pay envelope and never will!

Every proposed freight increase by the railroads has been uniformly and promptly suspended by the Interstate Commerce Commission without regard to its merits. Meanwhile every demand for an increase in wages has had to be satisfied. How long can this condition last? Does it mean anything that the railroad equipment manufacturing concerns, the steel rail mills and the other factories depending largely on the railroads for their orders are running on part time and discharging workmen? Let workmen think of this and let demagogues at Washington ponder over it! There will be another election for congressmen next fall.

It is amazing how the public misconcieves the railroad situation. The New York "Herald," always alert to the public welfare, justly characterizes it as "momentous." The railroads are not owned by a few men of wealth. Their prosperity doesn't concern a hundred or a few hundred individuals. They are owned by hundreds of thousands of shareholders and bondholders. Every depositor in a savings bank and every holder of a life or fire insurance policy is interested in the prosperity of our railways. In six of our states the savings banks have over five million depositors and their savings are largely invested in railroad bonds. If the railroads are bankrupt, what will happen to the savings bank depositor? Already the loss to the savings banks of New York State alone, with three million depositors, because of the decline in the market value of securities, has reached over $70,000,000.

The insurance companies invest their funds largely in railway securities—and heretofore these investments have been regarded as the safest. What will happen if the pressure upon the railroads for increased wages, increased cost of material and heavier taxes continues and if they are not permitted to slightly increase their rates? It is said that some merchants oppose the increase, but leading commercial bodies are heartily in favor of the advance. What will the merchants do in the face of receding prosperity?

Extravagant statements are made in regard to the amount of the increase the railroads would have if the application of the eastern roads for an advance of five per cent in their freight schedules were granted by the Interstate Commerce Commission, but the testimony shows that this would amount to about $40,000,000. Large as this appears it would be offset by recent increases in wages and the rise in the cost of material.

Every observant citizen fears that the country is drifting away from prosperity. This retrograde movement would be checked at once if the railroads, which constitute the second great factor in our industrial progress, were permitted to advance their rates. A good Democrat, Congressman Levy, has introduced a bill to expedite the decisions of the Interstate Commerce Commission. We hope the measure will pass. But it should be unnecessary. The exigency itself should compel immediate and favorable action.

President Wilson, in his recent message to Congress, speaking of the needs of the railroads, said: "We cannot postpone action in this matter without leaving the railroads exposed to many serious handicaps and hazards." This should be a warning to the members of the Interstate Commerce Commission. If they do not act promptly they should retire and be replaced by those who realize the need of the hour and who have the ability and the disposition to meet it.

Regulation Versus Strangulation.

(From the New York "Evening Mail.")

EVER since June, 1908, the necessity for an advance in railroad freight rates has been before the country. Ever since June 18, 1910, when Congress gave the Interstate Commerce Commission power to suspend new schedules of rates, the issue raised by the fifty-two eastern railroads has been officially before that body. Yet this proposition, of paramount importance to the industrial and commercial life of the nation, has remained undecided for three years and nine months.

It is only technically true that the case now pending before the Commission originated last May. It began with the filing of higher tariffs by the railroads while the amendment of the Interstate Commerce Act was before Congress in May and June, 1910, and it was not ended by the decision which the Commission filed on February 23, 1911. That action technically was a denial of the application of the railroads, but it was in fact an adjournment or suspension of the proceedings. The decision explicitly provided for "further consideration" of the rate question "if actual results should demonstrate our forecast of the future is wrong."

This "forecast" of the Commission was that increases in gross earnings would come to the railroads and that, with economy, the net earnings of the future would be found adequate.

The eastern railroads waited and economized —with the prices of supplies advancing, wages increasing, taxes growing heavier, new burdens imposed by legislation, by Commission orders and by the removal of grade crossings.

The Commission's forecast was not borne out. The gross earnings of the eastern railroads in the year ended on June 30, 1913, were $186,775,000 higher than in 1910, but expenses and taxes showed an increase of $203,087,000, so the companies were $16,312,000 poorer. "Actual results" worked out directly the other way.

The situation had become acute when, in April, 1913, the fifty-two eastern railroads renewed their application for a five-per cent increase in freight rates.

Formally presented to the Interstate Commerce Commission on May 13th, that body refused to give assurance that it would consider the case "before the summer recess."

In fact more than six months elapsed before the preliminary hearing was held on November 24, 1913.

That was nearly four months ago. The case has dragged along. The record has been piled high with evidence.

Surely the Commission ought to decide this case without further delay. Five of the eight men who considered this application in 1910 are still on the Commission, and they have had forty-five months in which to reach a conclusion.

Does the business of the country have to halt while these men dilly-dally over a problem that has been insistently before them during a period almost equal to the whole term of a national administration?

Does the proposed regulation and control of enterprise resolve itself into this, that business has to be hamstrung while officials ponder ponderously and go about the country making speeches or giving out interviews attacking railroad management?

In a case of life or death the jury of twelve men usually make up their minds within twenty-four hours.

Why, in this case, in which the business life of a nation is at stake, should forty-five months of consideration be required—with a decision still two or three months off?

What sense is there in holding up the railroads, in making extensions impossible, in preventing increased efficiency, in checking betterments by keeping the freight rate issue unsettled?

Government regulation never was meant to be government strangulation. The power to fix freight rates never was intended to be the power to delay forty-five months before giving a decision.

One of the great evils of this country to-day is the killing effect of prolonged litigation in the courts. This is an abuse from which all business interests suffer. It never was designed, when the Interstate Commerce Commission was established, or when its powers were enlarged in 1910, to intensify that evil by creating another body that could hold up for an endless period questions that ought to be decided with reasonable promptness.

Forty-five months' consideration of one question is not reasonable promptness. It is simply a process of stifling railroad prosperity and preventing development and extensions.

The people are determined to have government regulation. They are equally determined not to have government strangulation. They want the railroads and every business enterprise to thrive and prosper. They are not in favor of having them Brandeised into profitless stagnated enterprises.

Hostility to Legitimate Business Condemned by the National Association of Manufacturers.

THE following resolutions which virtually condemn the hostility of the present administration to legitimate business were adopted at the 19th annual convention of the National Association of Manufacturers, which was held in New York on May 19th and 20th.

Hostility to business must stop: With feelings of profound anxiety we observe prevailing industrial and commercial depression wholly at variance with those healthy and prosperous conditions to which our country is entitled. On all sides productive industry and operative manufacture is shrinking in volume and output to a degree that forbodes years of slow recovery before prosperity can be restored. We observe policies fraught with experimental novelty with respect to the tested principles of the Sherman Anti-Trust Act. We witness, with amazement, hostility toward established and legitimate business from many sources—journalistic, legislative and even administrative; but we fail to detect any concerted and affirmative efforts to resuscitate business vitality or augment those great industrial forces that should express the sovereignty of our trade and commerce. The number of unemployed American working men, now hundreds of thousands, is increasing. Countless plants and factories operate listlessly on greatly reduced schedules. A hesitancy, born of relentless political onslaught and ruthless legislative assault, explains, in large part, our business inertia.

Therefore Be It Resolved: That the National Association of Manufacturers, a non-political, non-partisan organization, representing all crafts and groups of industry, do hereby solemnly protest against continuous assault on our established industries. That we affirm our conviction that unless there is a cessation of hostility to legitimate business the vitality of our commerce and trade will be critically impaired.

And We Therefore Finally Resolve: That we unqualifiedly oppose the passage of The Clayton Bill (H. R. Bill 15657), now pending before Congress.

Resolved: That it is the patriotic duty of the individual members of this Association in their respective communities to encourage and endorse the honest efforts of those who are faithfully endeavoring to foster constructive thought and measures in State and National Legislation and to earnestly appeal to American citizenship to condemn and displace those self-appointed or politically promoted demagogues who seek to perpetuate themselves in the administration of public affairs by any means or measure, no matter what the economic effect so long as such seem to promise temporary popular votes.

Resolved Further: That the members of this Association be asked to distribute this resolution widely in their respective communities.

The Parcel Post and the Railroads.

(From the Toledo, Ohio, "Times.") ..

A GREAT many people will believe that Congress has committed an unpardonable oversight by enacting the bill providing for the expenditures of the Post Office Department for the next fiscal year without including in it a provision to compensate the railroads for carrying the parcel post.

The bill is based upon estimates of the Department that next year the parcel post will handle 600,000,000 packages, from which it will derive a revenue of $60,000,000. In his annual report the Postmaster General suggested that the railroads would be entitled to additional compensation on this account, and the Department is said to be now gathering information relating to the correct basis for future fair compensation to the railroads on account of the new departure in our mail service. But Congress, either through neglect or because of the cowardly reluctance of modern statesmen to do anything to protect corporations from injustice, neglected to make any provision for the service of the roads in assuming their new burdens.

In Great Britain the railways receive 55 per cent of the revenues from the parcel post. Before the establishment of the system in this country the railroads received for transporting mails at least one-fifth of the postoffice revenue. Assuming that their service is no greater in handling the parcel post than with other mail, this increased revenue of $60,000,000 to the Postoffice Department should in all fairness mean increased payments to the railroads of at least $12,000,000.

The parcel post ruined or crippled the express companies without any compensation to them. It is now proving itself a heavy burden to the railroads, also without compensation, at a time when they are under the strictest government surveillance and undergoing a critical period in the history of their development. If this is justice, there can be no such word as hardship in the English language. The time has come for the American people to call upon their representatives to cease an attitude toward corporations indicating that they are to be harassed simply because they are corporations. It it time to cease wringing unnecessary taxation from them and treating them as necessary evils, if not public enemies.

The parcel post should be developed to the utmost, but it should be done with justice to all.

Mail Transportation Injustice.

(From the "Bache Review," New York.)

IT must be remembered that the Government's contract with railways is made on the basis of the weight carried at a fixed time, when all the mails are weighed, the Government thereafter paying a lump sum for four years following the weighing period, no matter whether the amount carried increases or not. The mails were weighed by the Government for this purpose before the Parcel Post was inaugurated, so that the railroads now are carrying all the additional parcel post without cost to the Government, and with a distinct loss to themselves. The utter injustice of this arrangement is demonstrated by a number of incidents which have come out lately. The "Eagle Enterprise" of Colorado, has the following jubilant and congratulatory note:

"Sherman Brothers, of Eagle, broke the record for parcel post shipments last week when they sent eighty fifty-pound sacks of oats by mail to J. C. Temple, at Hayden. By sending the oats by parcel post the cost of the shipment was over fifty dollars less than it would have been by freight. Sherman Brothers are among the progressive ranchers of this country, and the oats were shipped to Hayden to be used for seed."

In other words, the Government has taken the Sherman Brothers 80 sacks of oats and transported them at a price which enables these gentlemen to profit $50 over what they would have had to pay if they had been sent by freight. But think of the railroads! The Government pays them nothing at all for carrying the oats and they lose the whole bill, although they furnish the entire transportation.

Other shippers are taking advantage of this situation. For instance, on another of the Colorado roads a ton of ore was shipped recently in small 50-pound sacks by parcel post and these little bags traveled speedily on the passenger trains, but here again the roads get absolutely no pay for doing the business.

Six large mail order houses are shipping every day on an average 100,000 packages by parcel post, for the transportation of which the railroads do not get a cent.

We understand that the Post Office Department declines to pay any attention to the petitions of the railroads for justice. And the Interstate Commerce Commission, which is so ready to suggest that the railroads are neglecting opportunities to make business pay on the present scale of rates, turns a deaf ear to the subject.

If this kind of an operation were practiced by an individual or by big business, it would be considered sharp practice and dishonest and worthy of severe punishment.

Meanwhile, the railroads are having difficulty in earning their fixed charges and dividends, are making no purchases that are not absolutely necessary, and the business of the country is growing more and more stagnant because of this.

Annual Convention of International Railway Fuel Association.—The International Railway Fuel Association held its sixth annual convention in Chicago, on May 16th to 21st. President Collett's opening address was devoted largely to the conservation of the coal supply. He spoke in part as follows:

"The proper use of fuel on railroads depends also on other factors: Fuels should be properly prepared for delivery to the engine tender, and a uniform grade of fuel should be supplied where possible. It is fair to assume, where coal mines exist on railroads, that such coal will be used on its locomotives; first, because of lower cost and a constant supply, and second, to stimulate the industry. Efforts should be made to learn to use such coals, rather than criticize the quality, as the source cannot be altered. Every semblance of waste should be avoided from the time the coal leaves the mine until it reaches the locomotive tender, otherwise there is not the incentive for the engineer and fireman to exert their best efforts. If railway managers are shown, concretely, what it costs to operate locomotives not in good condition, the locomotive will not be permitted to long remain in this condition. The proper distribution of engines to divisions to secure the best results, the correct loading of cars and trains, and train movement, should be carefully studied from the standpoint of fuel cost, quite as much as from any other angle. The make-up and schedule of trains is important; it is all along the line of cooperation, and needs emphasis."

It was decided to hold the seventh annual convention of the International Fuel Association at Chicago, Ill., May 17th to 20th, inclusive, 1915.

The Swiss National Exhibition.—The Swiss National Exhibition which is held in Berne, the country's beautiful capital, up to October 15th next, had a brilliant opening on May 15th. A very comprehensive exhibition covering railway rolling stock with the Swiss Federal Government as the largest exhibitors is creating considerable interest among railway men. Among other exhibits is the first Swiss locomotive (now about seventy years old), ever used in Switzerland, side by side with the newest and most modern locomotive employed for express trains on the St. Gothard line.

The new Lotschberg Railway shows 2,500 H. P. electric engines which being the most powerful locomotives of the kind in the world, will prove of interest to those interested in electric railway developments. The exhibits include also special invalid railway carriages, rotary snow plows, mail and luggage vans and also refrigerator vans.

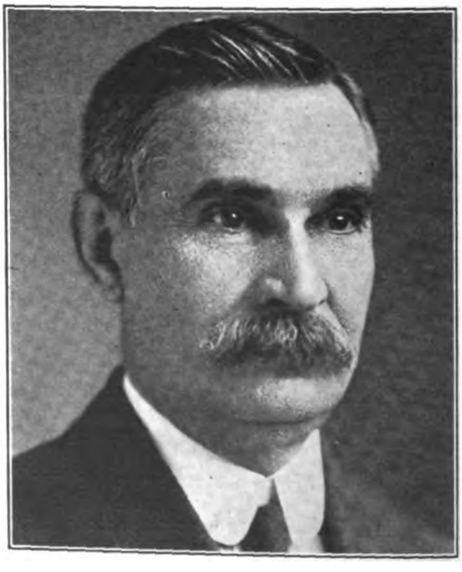
Personal

Joseph H. Young.

JOSEPH H. YOUNG, who for some time was president of the Spokane, Portland and Seattle and the Oregon Trunk Railway, has been elected president of the Norfolk Southern with headquarters at Norfolk, Va. He succeeds Charles H. Hix, resigned. Mr. Young was born on January 17, 1864, at Salt Lake City, Utah, and was educated at the University of Utah. He began railway work in 1882 with the Utah Central as office boy and warehouseman, and was later agent and operator at various stations, and then bill clerk on the same road. He was with the Union Pacific as ticket clerk and train agent at Ogden, Utah, from 1883 to 1886, and was superintendent of the Utah Division of the same road, now the O. S. L., from 1891 to 1902. From 1886 to 1889 he was traveling passenger agent of the Chicago & North Western, and then to 1891 was general agent of the Salt Lake & Eastern, and general superintendent of the Utah Central. Mr. Young was general superintendent of the Rio Grande Western, now part of the Denver & Rio Grande, at Salt Lake City, for two years from 1902 and then became general superintendent and later general manager of the Colorado & Southern at Denver. For a short time during 1907 he was general superintendent of the St. Louis & San Francisco. He was general superintendent of the Southern Pacific at San Francisco from 1907 to 1910, and in the latter year was elected president of the Alaska Steamship Company, the Northwestern Steamship Company, Ltd., the Northwestern Commercial Company, the Northwestern Fisheries Company, and the North Coast Lighterage Company, and vice-president of the Copper River & Northwestern. From May, 1912, to January, 1914, he was president of the Spokane, Portland & Seattle, the Oregon Trunk Railway, the Oregon Electric Railway, the United Railways, the Spokane & Inland Empire, the Pacific & Eastern, and the Dalles, Portland & Astoria Navigation Company, with office at Portland, Oregon.

John F. Auch.

JOHN F. AUCH, who has recently been appointed vice-president and traffic manager of the Philadelphia & Reading Railway, entered the service of the Philadelphia & Reading Railroad Company in October, 1875, as night operator at West Spring Mill, and remained in that department, alternating between night and day service, at various points along the line, until the fall of 1879, when he was appointed station agent at Chalfont, Pa. While in this branch of the service he was transferred two or three times until in the summer of 1885 he was made chief clerk to the division freight agent of the Philadelphia & Atlantic City Railroad Company at Philadelphia. In the fall of 1886 he became the division freight agent of the same Company, which position he held until that office was abolished in 1888, when he was appointed traveling freight agent, covering the territory of the Atlantic City Railroad and the New York Division of the Philadelphia & Reading Railway. In 1889 he relinquished the title and duties of traveling freight agent to accept the position of chief clerk to the general freight agent. That position he filled until April, 1891, on which date he was appointed division freight agent with headquarters at Harrisburg. In this position he remained until April, 1894, at which time he was advanced to the position of assistant general freight agent at Philadelphia, and remained in that position until May 1, 1908, when he was appointed general freight agent, which office he held until appointed assistant freight traffic manager December 1, 1909. This office he held for just one month, or until January 1, 1910, when he was appointed to the position of freight traffic manager. He fulfilled the duties of this position until January 1, 1913, when he



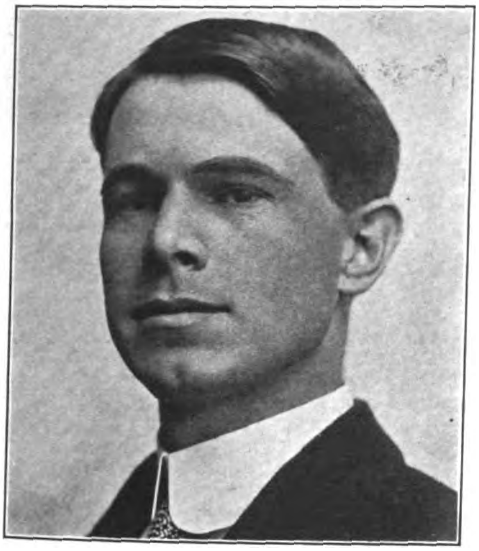
JOHN F. AUCH.

was appointed vice-president and freight traffic manager. Following the death of Mr. George F. Baer, president of "The Reading," the Passenger Department of the Company was placed in his charge, and on May 20, 1914, by action of the Board of Directors, he was appointed vice-president and traffic manager.

Mr. Auch is now the executive head of the Traffic Department of the Reading Railway System.

E. C. Bagwell.

E. C. BAGWELL, whose appointment as President's Assistant of the Seaboard Air Line Railway, with headquarters at Norfolk, Va., has recently been announced, is a graduate in civil engineering of the A. & M. College of North Carolina. He began railroad work with the Louisville & Nashville Railroad in 1903, when he was employed as rodman. In 1904 he entered the service of the Seaboard Air Line as inspecting engineer and, except for eighteen months (March, 1908, to September, 1909) when he was superintendent of the Charlotte Harbor & Northern Railroad, he has been continuously in the service of the Seaboard Engineering Department. For the past four years he has been principal assistant engineer and was appointed president's assistant on April 1st, 1914.



E. C. Bagwell.

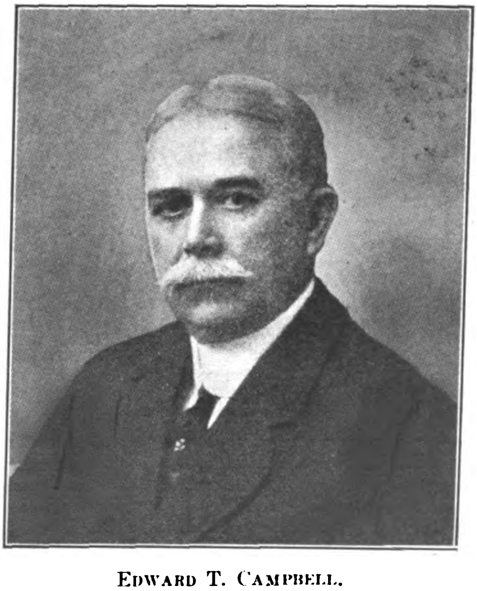
R. E. Kimbell.

R. E. KIMBELL has been promoted from the position of assistant general auditor of the St. Louis Southwestern to that of assistant to the president with headquarters at St. Louis, Mo. Mr. Kimbell was born January 19, 1867, at Little Rock, Ark., and was educated in the public schools. He began railway work in 1886 as junior clerk in the auditor's office of the St. Louis, Arkansas & Texas, now the St. Louis Southwestern. He filled various clerkships, was traveling auditor and chief clerk in the accounting department, until December, 1902, when he was made assistant general auditor of that road.

R. E. Kimbell.

Edward T. Campbell.

EDWARD T. CAMPBELL has been appointed general traffic manager of the Erie Railroad with headquarters at Chicago. Mr. Campbell began railway work in 1891, as contracting freight agent for the Queen & Crescent Route. From February to June, 1893, he was with the Chesapeake, Ohio & Southwestern as chief clerk, and the following two years he was secretary of the I. W. freight bureau. He was then, in June, 1895, made chairman of the Southwestern freight bureau, which position he held until 1899. In August, 1900, he was appointed purchasing agent of the Minneapolis & St. Louis, resigning in May, 1902, to become purchasing



Edward T. Campbell.

agent of the Erie, with headquarters at New York. Seven years later Mr. Campbell was made traffic manager of the latter road, with office at Chicago, which position he held at the time of his recent promotion.

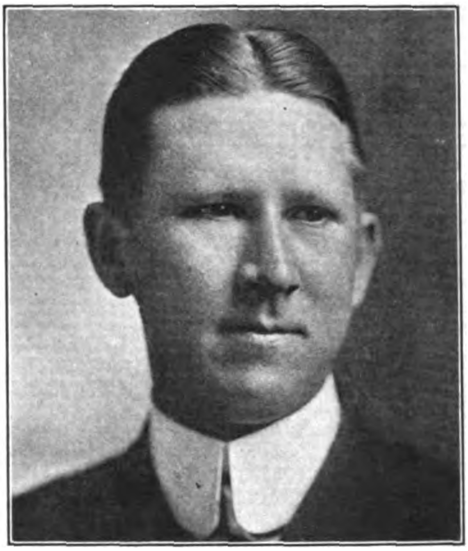
Fred Zimmerman.

FRED ZIMMERMAN, who has been appointed general freight agent of the Lake Shore and Michigan Southern and the Dunkirk, Allegheny Valley and Pittsburgh Railroads, with office at Cleveland, Ohio, was born July 26, 1866, at Portland, Me. He entered railway service in 1882, since which he has been consecutively to October, 1833, office boy and clerk with the Green, Kankakee, Chicago & Louisville Southern and Southern Despatch Fast Freight Lines; October, 1883, to April, 1887, clerk, Chicago & Ohio River Road; April, 1887, to February, 1890, rate and tariff clerk, general freight department, Louisville, New Albany & Chicago Ry. at Chicago, Ill.; February, 1890, to April, 1897, tariff and percentage clerk, general freight department, Michigan Central R. R. at Chicago, Ill., and Detroit, Mich.; April, 1897, to October 1, 1899, chief clerk, same department at Detroit; October 1, 1899, to July 1, 1900, assistant general freight agent at Buffalo, N. Y.; July 1, 1900, to November 1, 1909, assistant general freight agent, same road at Chicago; November 1, 1909, to January 1, 1911, general freight agent, Indiana Harbor Belt Railroad; January 1, 1911, to March 1, 1914, general freight agent, Chicago, Indiana & Southern and Indiana Harbor Belt Railroads.

FRED ZIMMERMAN.

John A. Streyer.

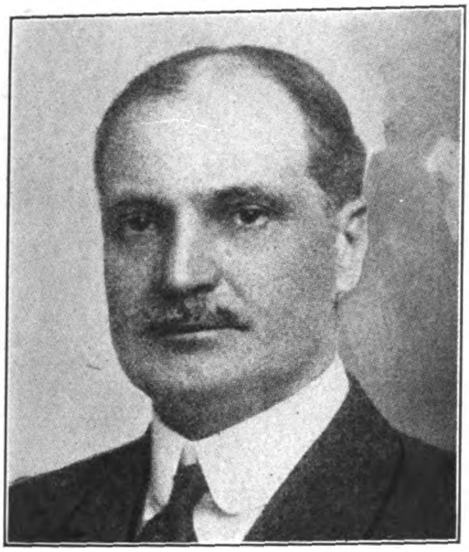
JOHN A. STREYER, who has recently been appointed traffic manager of the Macon, Dublin and Savannah Railroad, was born in Macon, Ga., on October 27, 1874. He entered railway service in 1889 as messenger in the traffic department of the Georgia, Southern and Florida and the Macon and Birmingham Railways. He filled various positions in the general freight agent's office of this road until January 1, 1894, when he became general clerk in the claim department. In May, 1894, he left the railway service to become engaged in mercantile business at Macon, but re-entered it again in 1898 as traveling freight and passenger agent of the Macon and Birmingham Railway and on February 1, 1900, was appointed traveling freight agent of the Atlanta and West Point Railway and the Western Railway of Alabama with headquarters at St. Louis, Mo., opening the first office located by this line in Western territory. He returned to the Macon and Birmingham Railway, February 1, 1901, as commercial agent and in the latter part of the same year was made general agent of the freight and passenger departments at Macon, Ga. In 1902, he was promoted to the position of general freight and passenger agent of the same road and in February, 1904, became general agent of the Macon, Dublin and Savannah Railroad. This position he held until April 1, 1904, when he was again promoted to the position of general freight and passenger agent with headquarters at Macon, which position he held until April 1, 1914, when he was appointed traffic manager as above noted.



JOHN A STREYER.

Samuel G. Strickland.

SAMUEL G. STRICKLAND, who has been appointed general manager of the lines east of the Missouri River of the Chicago and North Western Railway, was born August 15, 1859. He entered railway service in 1877 as a telegraph operator on the Canadian Pacific Railway. From 1878 to 1880, he was operator and clerk with the St. Paul, Minneapolis and Manitoba Railway, and from 1880 to 1892, he served successively as telegrapher, clerk, agent and general agent of the Chicago, St. Paul, Minneapolis and Omaha Railway. The following two years he was agent and superintendent of terminals for the same road and was then appointed chief clerk to the general superintendent. In 1898 to 1900, he was trainmaster and



Samuel G. Strickland.

assistant superintendent. From 1900 to 1905, superintendent at Omaha, Neb., and from 1905 to 1908, general superintendent at St. Paul. In the latter year he was appointed assistant general superintendent of the Chicago North Western at Chicago and in November, 1910, became general superintendent. Since April 1, 1912, and until his recent appointment he has been assistant general manager.

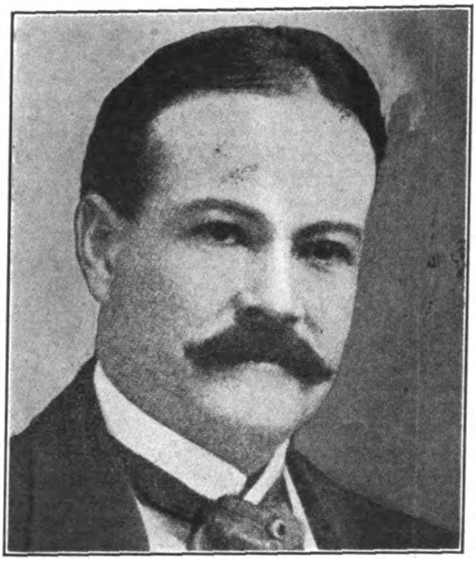
Marcus L. Bell.

MARCUS L. BELL, who has been appointed general solicitor of the Rock Island Lines, was born January 11, 1880, at Pine Bluff, Ark. He graduated from the University of Arkansas in 1898, and attended the law school of the University of Chicago in 1903. He entered railway service in June, 1904, as private secretary to the chairman of the Executive Committee of the Chicago, Rock Island & Pacific at New York, and on January 1, 1905, was made assistant attorney at Chicago. In November of the following year he was appointed local attorney at Chicago, and on August 1, 1909, he became assistant general attorney, being promoted to general attorney in April, 1910. He now becomes general solicitor, with headquarters at Chicago.

Marcus L. Bell.

W. D. Cantillion.

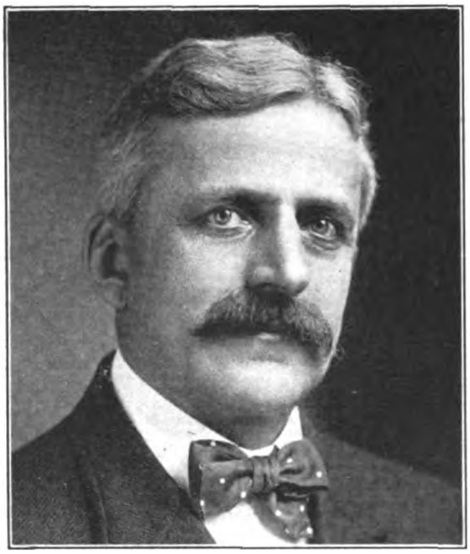
W. D. CANTILLION, who has resigned as general manager of the Chicago and North Western Railway, was born at Janesville, Wis., August 5, 1861. He received a common school education and in 1875 entered the service of the Chicago & North Western as a freight brakeman. He served in that capacity and as conductor until 1891 when he was made trainmaster at Milwaukee, Wis. From 1893 to 1897 he was assistant superintendent at Milwaukee. Mr. Cantillion was appointed superintendent at Winona in 1897 and four years later became assistant general superintendent. He was made general superintendent July 1, 1902, on January 24, 1906, was promoted to assistant general manager and since November 1, 1910, has been general manager of lines east of the Missouri River.



W. D. Cantillion.

A. K. Shurtleff.

A. K. SHURTLEFF, who has been appointed office engineer of the Presidents' Conference Committee of the Western Group of Railways, was from 1885 to 1894, engaged in railway construction work on various Western lines among which were the Chicago North Western, the Minnesota and North Western (now the Chicago and Great Western), Illinois Central, Pacific Short Line (now a portion of the Burlington System), the Great Northern and the Brainerd and Northern Minnesota (now the Minnesota and International Railway). From 1894 to 1898, he was division engineer of the Black Hills Division of the Freemont. Elkhorn



A. K. SHURTLEFF.

and Missouri Valley Railway (now a portion of the Chicago North Western Railway). From 1898 to 1900, division engineer of the Kansas Division of the Union Pacific Railroad and from 1900 to 1906, assistant engineer on the chief engineer's office of the Union Pacific Railroad. In 1906, he joined the forces of the Rock Island Lines as office engineer, which position he held at the time of his recent appointment.

M. C. Cleveland.

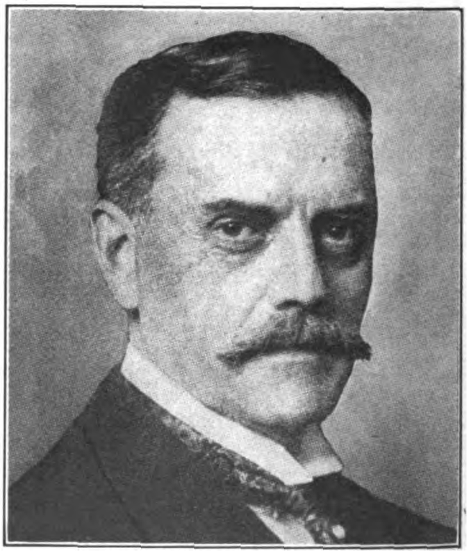
M. C. CLEVELAND, who has recently been appointed valuation engineer for the Lehigh Valley Railroad Company, began his railway service in 1902, as instrument man on construction for the Baltimore and Ohio. In May, 1903, he became assistant engineer of the Toledo, St. Louis and Western Railway, and from this position in April, 1904, accepted a similar one with the "Big Four." In September, 1905, he was promoted to the position of engineer of maintenance of way for the P. & E. Division of the same road, and in June, 1907, became division engineer for the Michigan Central Railway. In October, 1910, he was appointed special engineer for the vice-president of the New York Central Lines West of Buffalo, and in August, 1911, accepted the position of engineer of maintenance of way for the Chicago, Indiana and Southern Railway, which position he held at the time of his recent appointment.

F. L. Thompson.

F. L. THOMPSON, who has recently been appointed assistant chief engineer of the Illinois Central Railroad is a graduate of the Civil Engineering class of 1896, of the University of Illinois. He entered the service of the Illinois Central as chainman on June 18, 1896, and was later made rodman and inspector on the concrete work. In February, 1898, he became assistant engineer on surveys and on grade reduction work, and on January, 1900, assistant engineer in charge of grade reduction and double track work. In February, 1902, he was transferred to the chief engineer's office at Chicago, as assistant engineer and in February, 1903, became acting roadmaster of the Chicago Division. In October, 1903, he was transferred to the Louisville Division in a similar capacity, and in January, 1907, was appointed chief engineer of bridges and constructon. On July 1, 1910, he became engineer of bridges and buildings and on April 1, 1913, engineer of construction, which position he held at the time of his recent promotion.

E. C. Carter.

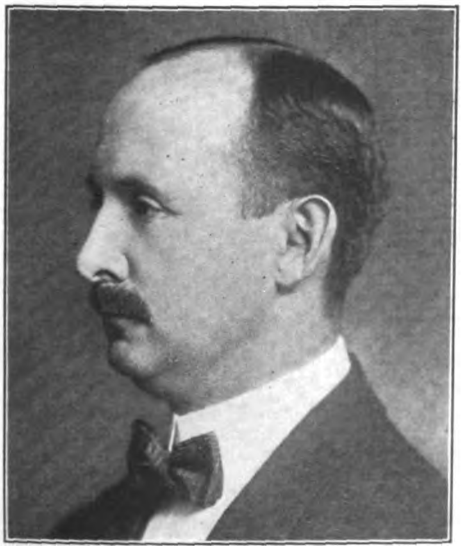
E. C. CARTER, who has resigned as chief engineer of the Chicago and North Western Railway, was born January 11, 1854, at Waverly, Ill. He was graduated from Rensselaer Polytechnic Institute, Troy, N. Y., and entered railway service in 1870, as a rodman with the Jacksonville & Southeastern Ry. He was with the Cairo & St. Louis Ry. and then from 1876 to 1877 was draftsman and mechanical engineer for the Springfield Iron & Steel Co. He returned to railroad work in 1877 as assistant engineer of the Chicago & Alton R. R. on its Kansas City extension. He was with the United States Government on Mississippi River observation in 1878 and then from 1879 to 1880 was assistant engineer of construction, Indianapolis, Decatur & Springfield Ry. Mr. Carter was resident engineer of the Wabash, St. Louis & Pacific Ry. from 1880 to 1884; from 1884 to 1885, assistant to chief engineer of that road, and from 1885 to 1887, assistant and contracting engineer of the Detroit Bridge & Iron Works. He went with the Chicago & North Western Ry. in 1887 as principal assistant engineer. He has been chief engineer of that road since December, 1899.



E. C. CARTER.

R. G. Fitzpatrick.

R. G. FITZPATRICK, who on June 1st, became superintendent of the Fort Worth and Denver City, began his railway career as operator for the Chicago, Burlington and Quincy Railroad at Chillicothe, Mo. Later he became train dispatcher for the Missouri Pacific at Sedalia and from there joined the forces of the Missouri, Kansas and Texas as chief dispatcher with headquarters at Dennison, Texas. His next position was that of trainmaster with the Fort Worth and Denver City, from which he resigned three years ago to become superintendent of the Wichita Valley Railroad. He was holding this position at the time of his recent appointment to the superintendency of the Fort Worth and Denver City as above noted.



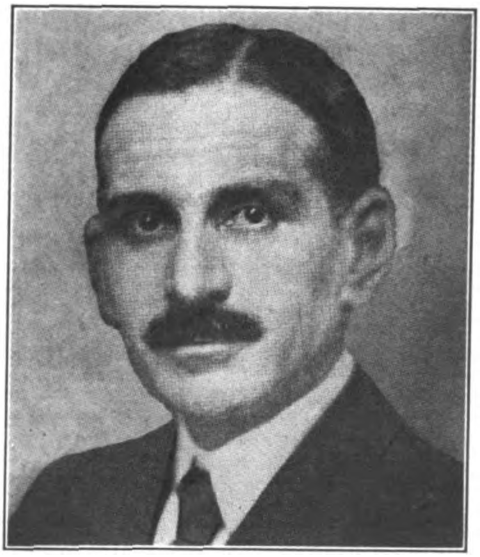
Fred T. Dickerson.

Fred T. Dickerson.

FRED T. DICKERSON, until recently assistant secretary of the Central Railroad of New Jersey, has been appointed assistant to the president of the same road with headquarters at New York. He was born on January 28, 1867, at Ramapo, N. Y., and was educated in the public schools. He also took a course in a New Jersey business college. In 1883 he studied telegraphy while serving as a telegraph messenger for the Delaware, Lackawanna & Western at Roseville Avenue, Newark, N. J., and in April, 1884, entered the service of the Central of New Jersey as operator and assistant agent at Lake Hopatcong. Subsequently he was appointed agent and operator at that station, and later had charge of other and larger stations. He served also for two years in the trainmaster's office. He was transferred in 1891 to the general offices of the same company at New York as clerk. Five years later he was appointed chief clerk to the controller, and later was advanced to chief clerk to the vice-president and general manager. In 1907 he was elected assistant secretary, continuing also to perform the duties of chief clerk. Mr. Dickerson's entire service of thirty years has been with the Central of New Jersey.

C. D. Honodle.

C. D. HONODLE, ticket agent at Akron for the Erie Railroad and the Cleveland, Akron and Columbus Railway, has been elected president of the International Association of Ticket Agents. Mr. Honodle was born in Akron, Ohio, on August 28, 1866. He commenced railroading in June, 1882, as an operator for the B. & O. at East Akron. In July, 1883, he became assistant ticket agent at the B. & O. station in Akron, going to the union station in the same capacity in July, 1887. Since June, 1891, Mr. Honodle has been ticket agent at the union station in Akron.



C. D. Honodle.

Shall the Government Own the Railroads?

President Low Discusses New and Critical Phases of the Railroad Problem, at Annual Meeting of the National Civic Federation.

HONORABLE SETH LOW.

IN his opening address at the Fourteenth Annual Meeting of The National Civic Federation, President Low devoted his attention chiefly to recent developments in the railroad situation, in their bearing upon national policies and the menace of government ownership.

Referring briefly to the efficient and useful work of the several departments of the Federation, Mr. Low described the preparation and passage of the Newlands Arbitration Law as perhaps the most significant work which has been carried to completion during the past year. The history of the Federation's part in this achievement was given in some detail in the last number of the "Review," and with it an account of the first arbitration held under the new law, that between the eastern trunk line roads and the conductors and trainmen. By request of both the railroads and brotherhoods, Mr. Low acted as chairman of this arbitration, which brought under review practically the whole field of operating costs, revenues and conditions of service.

In addition to this adjustment, Mr. Low enumerated twelve other controversies which have been settled or put in the way of settlement, through the United States Board of Mediation and Conciliation during the four months of the new law.

Arbitration is not necessarily a compromise, Mr. Low pointed out, but the fact remains that in the three principal arbitrations in the eastern territory the operating expenses of the roads have been heavily increased, and it is, of course, obvious "that a railroad cannot have its fixed charges indefinitely increased against its will unless it can at some time or another increase the rates which it will charge for service." Mr. Low then entered upon a discussion of these larger aspects of the problem as follows:

"The actual situation of the railroads, at the moment, seems to me so serious that, if this application for an increase of freight rates is declined, I fear the demand for the public ownership and operation of the steam railroads of the country will be inevitably strengthened. In a spirit of despair, men who know better will be apt to say, 'That is the only way'; and out of despair, I need not remind you, wise counsels seldom come. I make no apology, therefore, for pointing out briefly, on this occasion, some of the difficulties attaching to government ownership and operation of railroads in a country like ours, with a Federal Government evolved as ours has been, covering half a continent. Such information as I can command leads me to believe that in Germany, France, Australia, Italy and Austria, the earnings of the state-owned railroads in each country barely equal, if they do equal, the sums paid in taxation by the railroads of the United States. The freight rates prevailing in those countries are uniformly higher, I believe, than the freight rates prevailing in the United States. In some cases they are more than double, but it is noticeable that the average passenger rate, disregarding the division by classes obtaining there, is lower in some, and, I think, in all, of those countries than here. This is largely due, no doubt, to the fact that the multitudes there travel third class, and are given accommodations that would not be acceptable here.

"It is needless for my purpose to pursue this comparison into detail. What I wish to point out is, that in our country, by reason of its vast extent and by reason of its Federal government, and its historic evolution, the problem of public ownership, and, not less, the problem of public operation, are surcharged with difficulties that do not exist under different conditions. Leaving out of account altogether the difficulty of securing wise and economic management under the democratic conditions prevailing in the United States, the first point to emphasize is the difficulty of acquiring effective control of the railroads even if desired. Most of the railroads, if not all of them, are incorporated by the different States. This means that every railroad is given the authority by each State to operate within its own borders, and that every such railroad is equipped with the right of eminent domain to condemn land for railroad purposes within such State. What authority is to compel the States, or rather, what appeal is to induce the people of the various States to permit the railroads to surrender State charters in favor of national ownership; and in addition to grant to the national government authority to equip railroads so chartered with the power of eminent domain in every State of the Union? Without such power of eminent domain it would be impracticable for railroads to be enlarged or for new roads to be constructed. If, on the other hand, each State were to absorb its own railroads, we should have a condition in this country out of which it would be impossible to bring effective unity of action and a railroad service operated for the general good. Imagine, for example, the New York Central Line from New York to Buffalo, owned and operated by the

State of New York and the Lake Shore & Michigan Southern owned and operated in fragments by the States of Pennsylvania, Ohio, Indiana and Illinois. Who can think for a single moment that the result in public service would be either adequate, economical or satisfactory? Moreover, if the national government, despite every difficulty, were to succeed in absorbing the railroads of the entire Union, every State would lose the control of its intrastate traffic that it now enjoys; and every State would lose all the income which it now collects from the railroads by taxation, because United States property is not subject to taxation in any State. Every State, therefore, in such a case, would be confronted with both an economic and a social problem, born of our Federal system, and the scale upon which these effects would be felt would greatly magnify the embarrassments.

"But, assuming for a moment that this great economic and social change had been sanctioned and actually put into force, try to imagine, if you can, how the conflicting interests of different parts of the United States could be harmonized when the same government is responsible for railroad operation everywhere. The annual bill for the construction of public buildings for the Federal government has acquired the popular name of 'pork-barrel' because it is so universally recognized that appropriations for this purpose are made to gratify local sentiment and to promote the interests of individual congressmen more than upon the merits of the matter, as determined by careful inquiry. What possibility is there that the administration of a system of national railroads would be, or could be, carried on under our democratic government in any other spirit? And in what possible way could the general interest of the people of the United States, in the matter of transportation, be less well served? Furthermore, the political consequences of centering such power in Washington are beyond calculation . . . .

"Our privately-owned railroads are themselves largely responsible for the strength of the popular feeling in the United States (in favor of government ownership) . . . No doubt, the rebate system, so long practiced, accounts for most of this feeling. Happily, by virtue of the Interstate Commerce Law and the creation of the Interstate Commerce Commission, that which was a nation-wide abuse has become a rare exception, and it will become more and more rare. In other words, without public ownership, but through public regulation, we have substantially secured equality of treatment at the hands of the railroads for every shipper, large or small, in whatever State he may be . . .

"It is hard to speak with moderation of the financial abuses connected with railroad management which have done so much to create and to strengthen the demand for the public ownership and operation of railroads. The public has seen railroads loaded with charges for the profit of individuals responsible for the conduct of the roads, charges which add permanently to the cost of transportation. Increases of value, largely created by the public, have been absorbed entirely for private benefit; and all of this has gone on upon so great a scale and for so long a time as to have cost railroad management, to a great extent, but often unjustly, both the respect and the confidence of the people. It is a case where the innocent suffer with and for the guilty. If government regulation can successfully put an end to these evils no doubt private ownership and operation of railroads may long continue in the United States; but, if government regulation falls short of being as effective in these directions as it has fortunately been in the ending of rebates, the tendency toward government operation, despite all its difficulties and dangers, is not unlikely to grow, unchecked. If the railroads wish to escape public ownership they must consent to the public regulation, for the future, of the issue of stocks and bonds; and it is greatly to be hoped that instead of placing every imaginable difficulty in the way of such legislation, they will cordially co-operate to see that effective and fair legislation to prevent the repetition of the abuses of the past is quickly made a part of the law of the land.

One further observation is legitimate in this connection. If not completely, still very largely, the actual management of railroads in this country has passed, and is constantly passing, out of the hands of financiers and into the hands of practical railroad men who are less and less affiliated with the stock market. It is reasonable, therefore, to hope that we are passing out of the old era into a better order of things. The practical question also arises whether it is not better now to "let the dead past bury its dead" and to turn with united and courageous front towards the better future. An attempt to uncover all of the past, and to try to do ideal justice now for wrongs that were committed long ago, is certain to be very costly to the country as a whole, as well as to the unhappy stockholders, who, without personal fault, find themselves involved in such a predicament. Mr. Evarts used to say that "there are vested wrongs as well as vested rights," which was a wise man's way of saying that some wrongs are so costly to undo that it is better to leave things as they are and turn over a new leaf. . . .

"There is one aspect of public ownership and operation which it seems to me legitimate to point out to the railroad employes who are so largely represented in our membership, and this is its probable effect upon wages. Railroads that are publicly owned have available for wages only such sums as are appropriated by law. In a country of the vast extent of the United States that this difference is substantially certain in wages, as established by law, when they have once been fixed. Working conditions will also then be much more difficult to change than when the railroads are under private management. The cost of living is so different in different parts of the United States that this difference is substantially certain to be reflected in an average wage below that which the railroads can pay under private management. The agricultural interests of the country are enormous, and one of their greatest difficulties comes from the fact that agriculture cannot afford to pay as large wages as transportation and many other occupations may now. This is, in fact, one great reason for the high cost of food products, that agriculture cannot command the labor that it needs in order to cultivate as it should, and to produce and to harvest larger crops. As long as railroads are privately owned, agriculture must take its chances: but, in this country, if railroads were publicly owned, the granges and other combinations of farmers would certainly be on the job to keep railroad wages as low as possible. They would have to be or they could not work their farms at all. There is a rigidity about law that makes it difficult to change conditions once established; and it is equally hard, under the provisions of law, to take into consideration local qualifying conditions. Such considerations as these satisfy me that railroad employes are not only better off now, under the private administration of railroads than they would be likely to be under public administration, but also that under existing conditions they can hope for a betterment in pay and rules of service which it would be vastly harder to realize from a Federal government constituted like ours."

How a Great Railroad Helps the Farmers

By H. M. Cottrell.
Agricultural Commissioner, Rock Island Lines.

THE fourteen States served by the Rock Island Lines cover one-third of the tillable area of the United States. The territory includes a large part of the spring wheat, winter wheat, corn, alfalfa, cotton, rice and Kafir growing districts of the country. It covers a large part of five States where dry farming methods are necessary and districts in five States where drainage is the first requisite.

The Agricultural Department of our road makes a careful study of the agricultural needs and opportunities of each farming section of this large area, doing whatever it can to supply immediate needs and stimulating work that will lead to future large developments.

Constant watch is kept of the condition of the seed for both spring and fall planting. At any time, should the seed in a locality or a district show weak germination, warning is sent immediately to all newspapers, banks and business organizations in the affected territory advising of the defect in the seed and urging that all seed be tested.

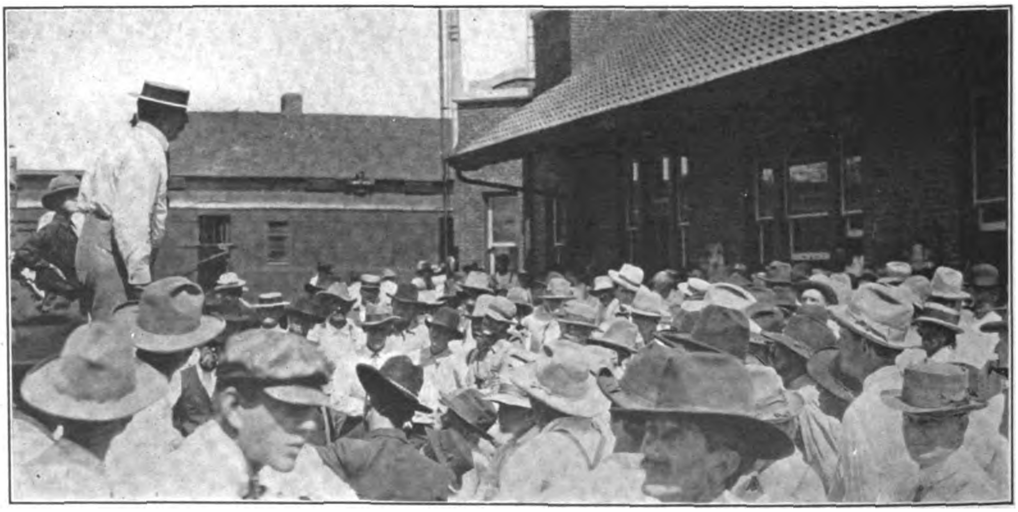
At the same time an effort is made to find seed of good quality that is adapted to the affected locality. Seed corn, seed wheat, alfalfa seed, Kafir seed, seed potatoes and forage seed campaigns have been conducted over districts from Minnesota to Louisiana, and from Chicago, St. Louis and Memphis to the Rocky Mountains.

Wherever the United States Department of Agriculture, or a State agricultural college or a farmer finds a new strain of some old crop, or a new crop that promises to be profitable, our agricultural department gives the matter the fullest publicity through its own publications, the general newspaper press and to banks, commercial clubs and farm owners.

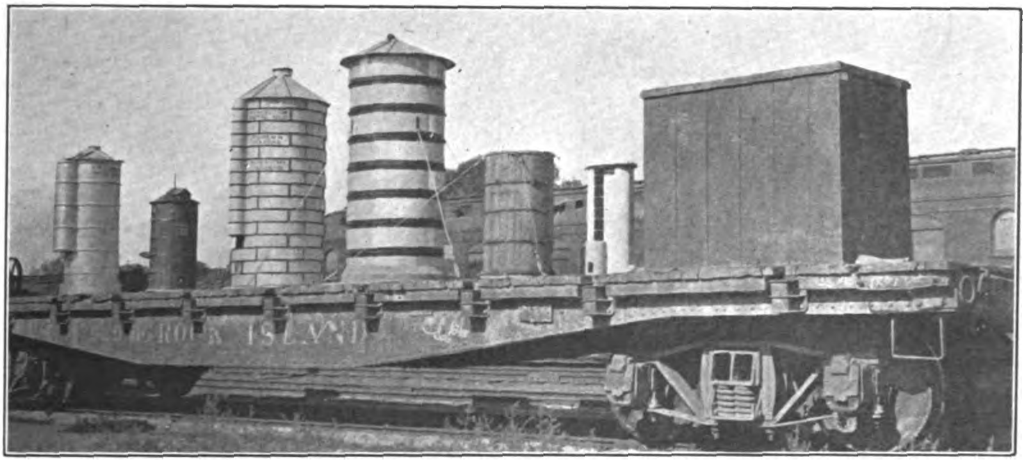
Among the larger campaigns that have been conducted are those for encouraging dry land farming, dairying, hob raising, corn growing, wheat growing, melon culture, irrigation and silos and silage.

The Agricultural Department issues a monthly agricultural paper, "The Southwest Trail," for free distribution. The issues vary from 30,000 to 120,000 copies each month, depending upon the extent of the territory needing the information covered by any particular number. Issues of 1913 are respectively on Spanish Peanuts as a new feed crop, Potatoes, Kafir, Raising Hogs, Alfalfa in Iowa, Raising Hard Wheat, Silage, Apple Growing, Irrigation by Pumping, Corn Growing in Arkansas and Louisiana, Dry Farming in Colorado and Farming on Cut-Over Lands in the South. Each number of the "Southwest Trail" takes up exhaustively but concisely one particular branch of farming.

A series of agricultural booklets are published treating special lines of farming at greater length than can be done in the "Southwest Trail." These pamphlets are sent free to patrons of the road, to banks, commercial clubs



H. M. COTTRELL, AGRICULTURAL COMMISSIONER, ROCK ISLAND LINES, TALKING TO KANSAS FARMERS ON THE NEED FOR SILOS.



Silage Special. One of the Five Flat Cars Carrying Models of Silos on Rock Island's Demonstration Train on the Southwest.

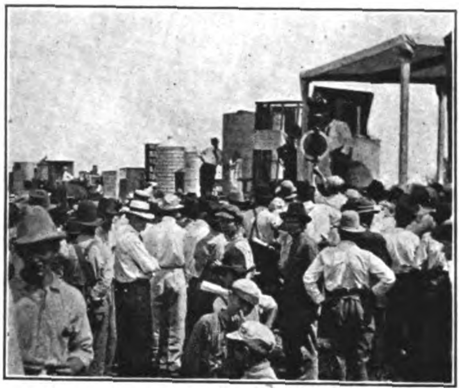
and newspapers. Several hundred schools use them as supplementary texts in classes in agriculture. The titles of these pamphlets are: How to Double the Yield of Corn; How to Double the Yield of Potatoes; How to Make Poultry Pay; Making Money in Dairying and Kafir and Milo.

Short, seasonable articles giving specific information on some one problem in farming are sent to the local newspapers. These articles treat of handling the soil, seed selection, tillage, harvesting and marketing of crops and selection, breeding, raising and feeding of farm animals. The plan is to give information in each of these articles that the farmer can put into practice the week or month of issue. Frequent requests are received from various city and country publications for special articles on specified agricultural subjects, and these are furnished promptly.

There is one marked difference between the agricultural work of the Rock Island Lines and that of other railroads. We have found that our best results in securing seed testing, deeper plowing, better cultivation, the growing of crops adapted to the varying climatic conditions and improvements in raising and feeding live stock are secured through work with the business men rather than direct with the farmers. It takes less time to convince the average banker that each ear of corn used for seed in his territory should be tested for vitality, than it does to convince the average farmer. When the banker becomes satisfied that such testing is necessary and is shown an easy method, he takes up the matter with each of the farmer patrons of his bank and keeps after them until they have followed his advice. Frequently one banker will induce 200 farmers to adopt a better plan. Hardware men and lumbermen are often as efficient as bankers in securing from the farmers actual results.

No matter what line of agricultural work we are doing, we always take it up through the schools of the territory in which we are working Many farmers can be reached only through their children. Pupils of the schools, both in city and country are eager to test the germinating qualities of seed. A farmer decides that his seed corn is good enough and that it is "book farming" to test it. A boy or girl from the school gets permission to test twenty ears of this seed and finds that they show only ten per cent vitality. He reports to the farmer and the pupil talks about it to all his associates and the news spreads over the neighborhood that the farmer's seed is not fit to plant. We have known many instances where such a test induced the farmer to secure strong seed.

Our investigation of alfalfa in Iowa shows the methods of the Rock Island Lines in determining the adaptation of special crops or methods to particular districts. Alfalfa when it does well in Iowa gives at least twice the net returns of any other field crop. Some farmers have succeeded in making a regular profitable crop, others have entirely failed with it and more have had a partial success, but not sufficient to determine whether to drop the crop or increase the acreage. No one seemed to know what caused success or what made failure. We studied the growing of this crop for three years in various parts of the State, noting carefully the conditions surrounding the failures and those where the farmers found the crop profitable. Early in 1913, we made a survey of alfalfa growing in all parts of the State, investigating the behaviour of the crop on several hundred fields. During this survey the surface rock and soil formations as outlined by the State Geological Survey were considered in connection with the growth of every alfalfa field. We found that lime, inoculation and drainage were the three controlling factors in the growth of alfalfa. In certain areas the soil has been formed in recent geological ages and is filled with lime. In these there is no difficulty in raising large crops of alfalfa when good seed and thorough preparation of the soil is given. In areas of older formation there is some lime, but not a sufficient quantity and the application of fine crushed limestone just before seeding is necessary. In still older geological formations the deficiency in lime is serious and heavy applications of fine crushed limestone are necessary, and it is also necessary to inoculate the soil with the germs that produce nodules on the alfalfa roots. Thorough drainage is essential in all parts of the State. We were able to make a map of the State, showing definitely the different areas and the treatment that land in each must receive to make



Oklahoma Farmers Inspecting Models of Silos on Rock Island Educational Train.

alfalfa a paying crop. Late summer seeding of alfalfa is advisable in Iowa. Last summer was too dry and we did not push increased seeding. If the season of 1914 is favorable, we will start a vigorous campaign for the seeding of one million acres to alfalfa in Iowa. We have made investigations in similar lines in several other States with satisfactory results.

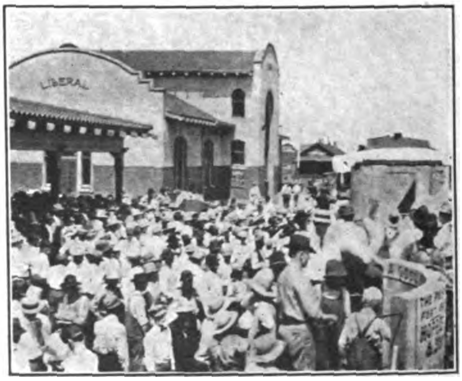
The Special Agricultural train has been one of our most popular lines of agricultural work, and is the quickest way to influence a large number of farmers. Last year the Rock Island Lines operated twelve Agricultural Specials. They were operated in seven States, covered runs of over 9,000 miles and were attended by 147,000 people.

In operating these trains we differ from most of the railroads in allowing only one particular line of farming to be considered on the train. If it is a "Wheat Special," the exhibits, lectures and demonstrations are confined to wheat only. If it is a "Silo Special," silos and silage alone are discussed. We aim to concentrate the attention of the entire district covered to improvement in one line, and believe in so doing we secure vastly greater results than is done when many similar subjects are considered. We put as much effort in the advance work of securing a large attendance at our Agricultural Specials as we do in the work on the train. We get bankers and merchants in each town where the Special stops to send personal invitations to every customer to come with his family to the train. We send invitations to every teacher in both country and city schools to come with her pupils. We ask that all business houses and schools in a town close twenty minutes before the arrival of the train. Our object is to get every man, woman, boy and girl in both country and city to come to the train. We provide special cars and lectures for the men, for the women and for the boys and girls. Our aim is to get our lectures and exhibits discussed that night, following the stop of our train in a town, at the supper table by every member of the family in every home in the country and town. This makes the special line of farming we are pushing a community thought. The farmer is urged by every member of his family to adopt the method we recommend. All his neighbors talk to him about it. When he comes to town his merchant, banker and blacksmith urge on him the improved method. His children talk about it at school with their teachers and other pupils. Even the girl in the millinery store talks about the train work with the farmer's wife when she goes in to buy a hat. The train is thoroughly advertised in local papers and by posters and concise practical articles on the subject handled by the Agricultural Special are furnished the local papers for several weeks after the train has been operated. This creating a community interest influences a much larger number of farmers than when an appeal is made to them only.

Each of our Agricultural Specials is operated somewhat differently from the others. The record of three of the specials will show our general plan.

WHEAT SPECIAL: In 1910, Oklahoma had the largest wheat crop in her history. The wheat was plump and unusually heavy. On account of frost in the northwest in the previous year, there was a shortage of wheat in large milling districts such as Minneapolis, Chicago, and Buffalo. The Oklahoma wheat was ready to ship in June, and a large movement to northern milling centers was expected. Hardly a car went north of Kansas City. Representatives of the northern mills, even as far east as Boston, came to Oklahoma, got samples of this fine wheat, went home and no orders followed. We knew that something must be the matter. We went to Minneapolis to find from the large mills what it was. One of the large mills had just finished a baking test of the flour from this Oklahoma wheat and found that it would make 260 one-pound loaves per barrel. The northern mills guarantee 320 one-pound loaves from each barrel of flour. They said that if they should send out flour from the Oklahoma wheat that this loss of 60 loaves per barrel of flour would destroy the markets that they had spent years of work and millions of dollars to build up. In Kansas City we found that during a time that 1800 cars of this wheat was received, only one car furnished the required loaves. Experts at the large mills explained that this defect in Oklahoma wheat came from the careless mixing of seed that often repeated and resulted in a mongrel strain that in all countries produced a flour that was weak in rising qualities. These experts also said that pure seed and good preparation of the soil would secure wheat in Oklahoma from which flour of the highest baking quality could be made.

The Rock Island Lines started a campaign



Farmers at Liberal, Kansas, Inspecting Models of Silos.

through the newspapers and with the banks, grain dealers, millers and commercial clubs to get the Oklahoma farmers to sow pure wheat. We operated a wheat special, making stops in 92 towns. On this train lectures were given showing how they had lost three million dollars that season from sowing mongrel seed. Samples of good and poor seed were shown and many farmers brought samples of their own wheat to learn the quality. In cars for the women, the same story was told, wheat samples were shown and loaves of bread showing the large loaf from flour from pure wheat and from that made from the usual mongrel wheat. The women were shown how much bread they lost from each sack of flour, because pure seed was not used and were urged individually and through their clubs to get pure wheat sown on every farm in their communities. The children brought samples of wheat from their fathers' farms or from the grain elevators and were taught how to select pure wheat and how to tell when fine appearing wheat was of mixed origin. They were shown the losses and what these meant to the State and to their own community, and even to their individual homes. The State Millers' and State Grain Dealers' Associations agreed to furnish pure seed at actual cost as long as they could find it. These Associations received orders before our train stopped running for sufficient pure seed to sow 200,000 acres. We have continued the agitation for pure seed every year since the running of the first Wheat Special.

CORN SPECIAL: In January, 1912, we found that the corn saved for seed in the northern corn belt was the poorest ever known. Particularly in Iowa not over half of it would germinate at all, much of it would show only ten per cent germination, and on many farms fine appearing ears would not have a single kernel that would grow. The attention of farmers and business men was called to this condition, but they would not believe it and in most communities declared that they did not intend to test their seed before planting. This was a serious matter to the Rock Island Lines as there are five million acres of corn grown along our lines in Iowa alone and the planting of such poor seed would result in a heavy loss of freight the following winter.

Germination tests were secured from so many parts of the State that we were sure of our position. The matter was presented to the Greater Des Moines Club, and they immediately voted an appropriation and decided to join the Rock Island in a State wide campaign for the testing of every ear of corn used for seed. Telegrams were sent to every bank and newspaper in the State describing conditions and urging a concerted effort to have the seed corn tested on every farm. Sixteen hundred banks and trust companies were induced to join the movement and many banks purchased seed testers and tested corn free for their farmer patrons. Two thousand manufacturers took up the matter with their customers. Jobbers sending two thousand travelers agreed to have their men urge the testing of seed corn before they showed their goods. Three hundred commercial clubs were induced to use their efforts. The County Superintendent of schools in every county in the State was asked to get his teachers to have each pupil test the seed corn of some farmer. At our request the Bell Telephone Company called up every farmer in the State who had one of the Company's 'phones and asked him what his seed corn tested. Usually the farmer answered that he had not examined it. He was courteously urged to test his seed immediately and report the result to the telephone central. As fast as these reports came in they were tabulated, and as soon as a dozen or more were received from one locality, the average was figured and the banks and commercial club in that town notified and shown what the loss would be in their county if such poor seed was planted.

The Rock Island Lines sent out five seed corn special trains, four in one day. These covered over 2,000 miles of Rock Island track in Iowa. At the suggestion of the agriculturalist of the Rock Island Lines, the Greater Des Moines Committee asked all the other railroads in the State to operate Seed Corn Specials. Some of the lines did, and all of the lines carried on some kind of a seed corn propaganda. The result was, that with the poorest seed corn found in the State in forty years and a general insistence of the farmers that there was no need to make a test, the seed corn was generally tested and an unusually good stand of corn secured. For months through the winter, the Rock Island Lines had difficulty in moving the enormous amount of corn that was shipped over its rails.

SILAGE SPECIAL: The severe drought of the summer of 1913 dried up the corn and forage crops in several of the Western States to such an extent that it was considered that there would have to be a general shipping out of stock. The burnt up forage would not keep the stock. The same material preserved in silos would. The Rock Island Lines started a Silage Special train in Colorado Springs, operated it through Eastern Colorado, Western and Central Kansas, the Panhandle, Eastern New Mexico, Oklahoma and Northern Texas, closing a five weeks' continuous run at Fort Worth. Stops were made in from seven to ten towns daily, 116 stops being made in Oklahoma alone. Flat cars on the train held twenty silos of different types and machinery for cutting the forage and filling the silo. At each stop a man who had put up and fed thousands of tons of silage explained the principles of making silage, showed how to handle the crops in the locality where he was speaking so as to get the greatest value out of the feed through the silo, and showed how to feed the silage with the straw or other available forage. Then the people got on the flat cars and examined the exhibits. An expert was stationed on each car to answer questions. No agricultural train ever operated by the Rock Island Lines has secured such immediate results. In the dry farming sections of El Paso County, Colorado, 53 silos were constructed and filled immediately after the operation of the train. Until this season there has not been a single silo in Thomas County, Kansas; fifty were built this summer in time to be filled. At Almena, Kansas, forty farmers as they left the train said they would start the construction of silos that week. Forty-eight farmers around Norton, Kansas, bought the material to construct home made silos. Seventy-three farmers around Liberal, Kansas, built silos. Like results followed all along the route of the Silage Special. A thousand or more home made silos were constructed. From two to four cars of silo material were shipped out of Kansas City alone daily on the Rock Island Lines for several weeks to points along the route of the Special.

After the tour a canvass was made showing that in one Colorado County, fifty silos were built almost immediately. In another county in Kansas, a newspaper published the names of seventy-eight farmers who had decided to follow the advice of railroad experts and save their fodder by means of silos. An estimate made by Kansas Agricultural College experts, who were with the Rock Island train, was to the effect that more than 1,000 silos would be built along the line of the Rock Island in that State alone, as a direct result of the campaign. A total of 3,000 silos of all kinds is a conservative estimate of the results over the lines covered. And the effect will be cumulative, for every silo built will serve as a reminder to the stock or dairy farmer who has none, that his system lacks an essential element of economy.

Another strong campaign was conducted by the same company during the early spring of this year in Kansas and Oklahoma, where seed corn was of poor germination, because of last season's dry weather. Bankers, business organizations and schools were enlisted in a seed testing movement that covered both States from end to end and resulted in the careful selection and proving of nearly every kernel of corn planted along the Rock Island Lines this year. Without the testing campaign corn would not be showing half a stand. The planting of only the seed from ears that had been subjected to the germination test and proven prolific, has resulted in a corn prospect that is fully fifty per cent better than could have been expected from the showing early in the year.

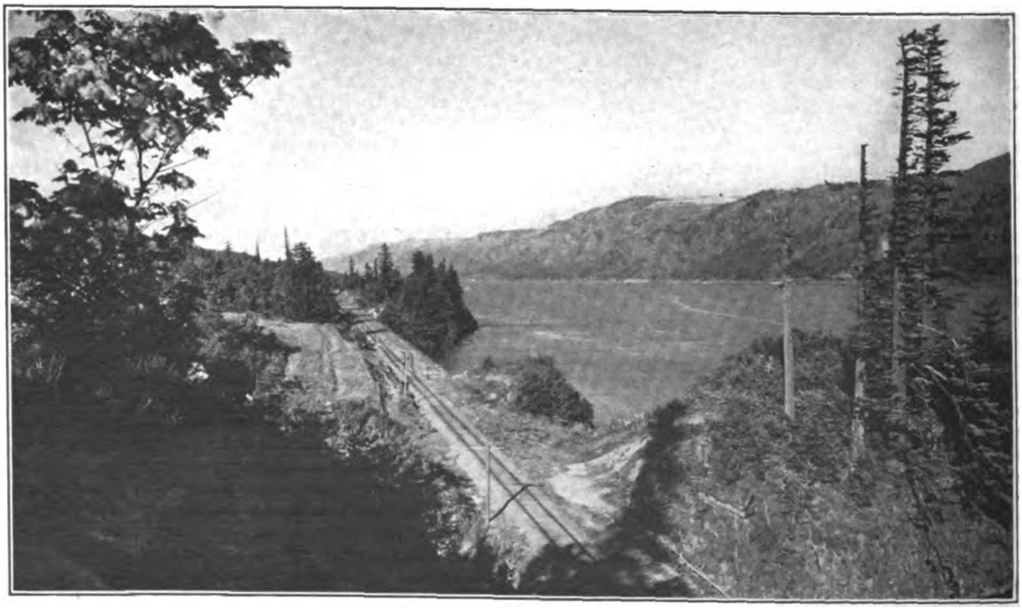
Grain and fodder for livestock are vital factors in the prosperity of the granger roads, hence the extraordinary efforts on the part of experts in railroad employ to keep production at the maximum point.

The Hill Invasion of the Pacific Northwest

DURING the last six years, more than 700 miles of new railway line have been opened to traffic in the Pacific Northwestern States of Oregon and Washington by the Hill System. The affiliated properties, the Spokane, Portland & Seattle Railway—"The North Bank Road"; the Oregon Trunk Railway, into Central Oregon; the Oregon Electric Railway, the first long-distance interurban line in Oregon and the United Railways, a line which was projected from Portland to Tillamook Bay, on the Oregon Coast and twenty-seven miles of which were constructed, and is in operation, are owned equally by the Great Northern Railway Company and the Northern Pacific Railway Company. Striking changes have taken place in the Pacific Northwest consequent upon the era of extensive railroad construction popularly referred to as the "Hill Invasion."

The North Bank Road between Spokane, the

Oregon Electric Limited Train and Typical Station Grounds in Willamett Valley Cities.



The North Bank Road Along the Scenic Columbia Between Spokane and Portland.

Oregon Electric Double Track Entrance to Portland, Eight Miles in Length, Equipped with Automatic Block Signals.

metropolis of Eastern Washington, and Portland, pierces the great Cascade Mountain Range on strictly a water-level grade along the Snake and Columbia Rivers, through one of the choicest scenic sections in America. West of Portland the line follows the Columbia to the Pacific Ocean through the historic city of Astoria, and beyond to oceanside beach resorts. On Young's Bay, practically a part of the Astoria Harbor, work will be instituted at once on construction of a system of docks. Between this point and San Francisco a line of the fleetest steamers will be established early in 1915, connecting with limited train service to Portland and the East.

Development in Western Oregon, and especially the Willamette Valley, a district 150 miles in length and averaging fifty miles in width, lying between the Cascade Range and the Coast Range, has been rapid since the electric lines penetrated the region. They brought to life new communities and gave the older ones a fresh start. The Oregon Electric parallels portions of the Southern Pacific in the Willamette Valley. The electric lines interchange traffic with steam lines in the Portland terminals. The Oregon Electric operates 189 miles of trackage and 139 passenger and freight trains daily. The main line between Portland and Eugene is 122 miles in length. The local and limited trains run on fast schedules, the night trains carrying standard sleeping cars and the limited trains observation parlor cars serving buffet meals.

The Oregon Electric has just completed a year's job of reconstructing and double-tracking the entrance into Portland at an outlay of about $800,000. The line is double-tracked eight miles outside of the city and runs through the center of the shopping and theater district of Portland to the North Bank Station.

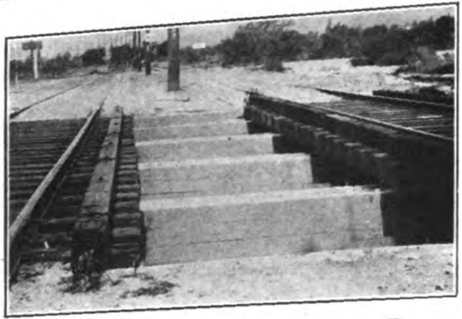
A Modern Railway Storm Water Drain

By Albert Marple.

ANYONE who knows anything about Southern California is aware that at certain times of the year that section is visited by heavy rainstorms. This is probably true even more in other sections than in the southern portion of the Golden State, but these storms are more remarkable in that section than in others on account of the fact that all other seasons of the year are fair and pleasant. These storms come so suddenly and so very often, that the people are unprepared for them, and they cause great damage. The rains of last winter in California did thousands of dollars damage to the railroad lines. For a day or so transcontinental lines were out of commission, and local lines, were at several points blocked for a week or more. Bridges were washed out, trestles were carried away, tracks for long stretches were undermined and wrecked, and, as a whole, the railroads of California, along with those of the States immediately adjoining on the east, were temporarily crippled.

Method of Placing the Concrete Piers for Railroad Bridge.

There were several points, however, along all of the lines that were protected against these waters in a proper manner, one of these being a wash district on the Pacific Electric line just



Concrete Piers in Railway Water Drain as They Appear from Above.

A Long View of Drain with Good Roads Bridge in Distance.

a short distance from Azusa. This system seems of such an efficient character that we feel that it is deserving of description. It is located about a mile distant from the mouth of San Gabriel canyon. The stream running down this canyon, is at every rain, so swelled that it comes racing cut of the canyon and upon the level lands just below at a frightful rate, having, by the aid of the streams from the many side canyons, been converted into quite a river. The level land, on account of the several days of continuous rain, becomes so water soaked that it will absorb no more and consequently the water must run off, headed for the lower points.

After leaving the mouth of the canyon the stream widens out to possibly half a mile, but as it nears the point where the concrete work is located, on account of the grade of the land it narrows again, so that it is possible to confine it within this storm water ditch, after passing from which it again widens out and spreads out over the farm land and ranches in that vicinity.

The waters of this stream had done so much damage that finally the railroad company and the county of Los Angeles joined hands and constructed this modern storm water drain, for, in addition to taking care of the property of the company, it also serves to protect the section of the foothill boulevard, one of the county good roads, that is immediately in the path of the water.

The concrete-lined ditch is about 500 feet in length and 24 feet in width, the walls on either side having a height of four and a half feet. These walls are six inches in thickness at the top and twelve inches at the bottom. The bottom of the walls rests on foundations, which are six inches in thickness and two feet wide. In addition to the four and a half feet above the ground the walls are buried three feet within the sand and gravel.

The bridge on which the double-track railway line runs is located at the intake of this storm ditch. It is thirty feet wide and as long as the ditch is wide. On account of the heavy cars that pass over these rails three supports have been placed beneath the bridge, these being six feet apart, measurements being taken from the center of the piers. The piers are five feet in height, eighteen inches thick at the top and two and a half feet at the bottom. These, also, are buried three feet in the sand and gravel, being located upon a foundation eight inches thick and five feet wide. The piers are pointed at the ends so as to cut the water as it comes in contact with them. At the upper edge of the piers four indentations were left during the course of construction, these being to accommodate four large beams, reaching across the entire width of the ditch and supporting the ties for the tracks.

The bridge over which the good road runs, and which is at the exit of the drainage system, is fifty feet in width and six and a half feet high. The facing across the side is two feet in width and the single support, which runs the entire width of the structure, is ten inches in thickness at the bottom, tapering gradually toward the top, at a point six inches from which it is eight inches in thickness. From this point the support flares outward and at the point where it connects with the under side of the bridge it is eighteen inches thick. This, also, has a wide concrete base.

All of the concrete work is re-inforced by steel rods. In the construction of this waterway the bed of the ditch was lowered so that it might be on a natural slope with the bed of the wash on either side. The bed of the ditch lies about four feet below the land located on either side.

Agricultural Department Experiments with Poultry Cars

To test the efficiency of refrigerator cars in the shipment of dressed poultry, and to determine the changes that take place in this poultry in transit at different temperatures, the Bureau of Chemistry, United States Department of Agriculture, has made complete examinations and records of 120 carload shipments of dressed poultry which traveled an aggregate of 140,000 miles. The hauls averaged between 1,000 and 1,500 miles, and terminated generally in New York City. No car was used twice, and many different types of ordinary refrigerator cars were employed. The shipments were made in winter and summer, so that the effect of outside temperatures could be determined. Many of the cars were equipped with accurate recording devices which showed the temperature near the ice bunker and in various parts of the car, and also outside temperatures. As a result of this experiment the specialists have found that the builders of refrigerator cars have not kept pace with the refrigerating industry in general, and have also determined the temperatures which best keep poultry fresh in long trips from Iowa or Tennessee to the Atlantic Coast markets. These results are reported in Bulletin No. 17, "The Refrigeration of Dressed Poultry in Transit," which contains a large number of tables and illustrations in its 35 pages.

The poultry shipped in these cars was carefully prepared and chilled for 24 hours to 32 degrees F., packed in one dozen to the box, and the boxes placed in refrigerator cars which had been iced 24 hours before loading. Accurate chemical analyses of the conditions of the poultry were made prior to the shipment, special attention being given to the percentage of amoniacal nitrogen in the muscle tissue, which is a naccurate index of the degree of deterioration in the flesh of dressed poultry. The fresh chicken shows .0110 per cent such nitrogen. It was found that poultry kept at a temperature of 18 degrees to 26 degrees F. showed only .0120, while a temperature of above 31 degrees F. gave nitrogen per cent of .0131, and 35 degrees F. or above, a nitrogen per cent of .0141.

The poultry after arrival in the car was then kept under exaimnation while in the wholesale commission houses, and at the retailers. The commission houses kept the low-temperature shipments at 29.8 degrees F., whereas the average for the high-temperature shipments was 32.2 degrees F. The retail stores kept their poultry at from 35 degrees F. to 39.3 degrees F. It was found that the high-temperature shipmenas after a transit period of five days showed an increase in nitrogen to .0143 per cent. The high-temperature shipments at a retailer's after seven days showed a nitrogen percentage of .0188. The changes during the commission period were, therefore, very slight; but after four days at a retailer's ,or nine days after the railroad haul the low-temperature shipments increased to .0144 per cent, which is nearly the same as the high-temperature shipments at the end of transit period. This indicates that if the car temperature is above 35 degrees F. the poultry when it reaches the market has the disadvantage of a deterioration equivalent to five or more days in the market, and must be consumed five days earlier than that arriving at car temperatures below 24 degrees F.

The experiments indicated that less than 31 degrees F. is the most satisfactory temperature of dressed poultry for long hauls. The ten-degree rise in the temperature of the car during the haul makes a difference in keeping time on the New York market, even when the market conditions are favorable. Even poultry excellently handled, as was the case in these experimental shipments, if exposed to unfavorable temperatures during transportation, receives an impetus towards decay that cannot be overcome by subsequent careful treatment on the market. It is a comparatively simple matter to prevent decay, but it seems to be impossible to stop decay by the use of low temperatures once the decay has gained a foothold. Imperfect work by the carrier nullifies to a certain extent the work of the packer, and the wholesaler or retailer handling the goods on the market. The temperatures indicated by this investigation to be most desirable for the transportation of dressed poultry are considerably lower than those generally accepted as satisfactory.

The information furnished by these 120 carshipments of dressed poultry indicate that most of the refrigerated carriers of the United States are not built to maintain optimum condition during warm weather for the transportation of a highly perishable commodity, such as dressed poultry. Certain refrigerator cars are much more efficient than others, and their increased efficiency apparently results from their construction.

The insulation of the car in relation to temperature is its most vulnerable part, with the character of the ice bunker next in importance. In the past the insulation has not been sufficiently heavy to maintain the low temperatures produced by the refrigerant, and the bunker has not been so built as to distribute its refrigerating effect evenly throughout the car. This last was fully established by the use of thermographs and the electric recording thermometers in various parts of the car. The use of a dead air space in cars is not found to be successful. Cork, the best known insulator, which is almost impervious to water and contains practically no nitrogenous material which might produce decay, has not been used to any great extent in car construction. Wool and hair felt are good insulators, but their high percentage of nitrogenous material makes them good bacterial media when moist. These materials when once moist seldom dry out, and the result is putrefaction, giving rise to offensive odors, which contaminate goods. Some of the vegetable or cellulose fiber insulators are perhaps slightly more resistant to moisture and bacterial action, but in time they also become moist, and the alkalies present in such material hasten their chemical decomposition. It is for this reason that car builders are exerting every effort to prevent moisture from reaching the insulation. Mineral wool is least subject to decay, but on the other hands, its nonadhesive qualities hinder the manufacture of strong material.

The insulation in the side walls and floors of the cars used by six different lines shows no radical difference in quality or quantity, though methods of construction in certain cases are preferable. The roof of the car theoretically is most severely taxed to prevent transmission of heat. The most efficient cars studied were those with the best insulated and best built roofs. More attention should be paid to roof and floor insulation, and the floor should be built with its insulation more effectively protected against moisture.

The wire-basket principle of ice bunker is sound because abundant air access to ice and salt results in increased efficiency. A serious shortcoming of the present types of cars is the impossibility of equalizing the temperature at the center and at the bunker so that all parts of the car are sufficiently cold. Good bunkers and any additional insulation, together with the stowing of the load so as to provide passages for cold air between packages, should materially help to improve results. The well-cooled package does not show changes in temperature corresponding to those in the air of the car, but a long continued increase of temperature or direct contact between the package and the wall of the car, and therefore, the source of heat, affects the goods in the course of time. The daily rise and nightly fall of temperature in the car sometimes result in slight changes in the packages, but it is the constant or maintained rise in the average temperature of the car that is responsible for objectionable results noted at the expiration of long hauls.

The Traffic Aspect of the Panama-Pacific International Exposition

By A. M. Mortensen, Traffic Manager, Panama-Pacific International Exposition.

A. M. Mortensen.

NEVER in the history of American railroads has there been an exposition of any kind, or a celebration held, of such great importance to transportation interests as will be the Panama-Pacific International Exposition to be held in San Francisco from February 20th to December 4th, 1915.

Located as the Exposition City is, on the western edge of the United States, we must reach back great distances to the centers of population to secure our attendance.

Many thousand tons of exhibits to come from the producing centers of the United States and the world must be transported great distances to be displayed in the Exposition palaces. All of this long distance travel and movement of freight very materially affects the transportation interests of the Nation.

Previous universal expositions held in the United States have been located in cities close to the center of population. While they have been attended by very large numbers of people, the great volume of traffic originated in a territory within five hundred miles of the Exposition city. Thus the amount of money paid by visitors to the Exposition for transportation was insignificant when compared with the amount that will be spent by the people of the United States and the world in traveling to the Panama-Pacific International Exposition.

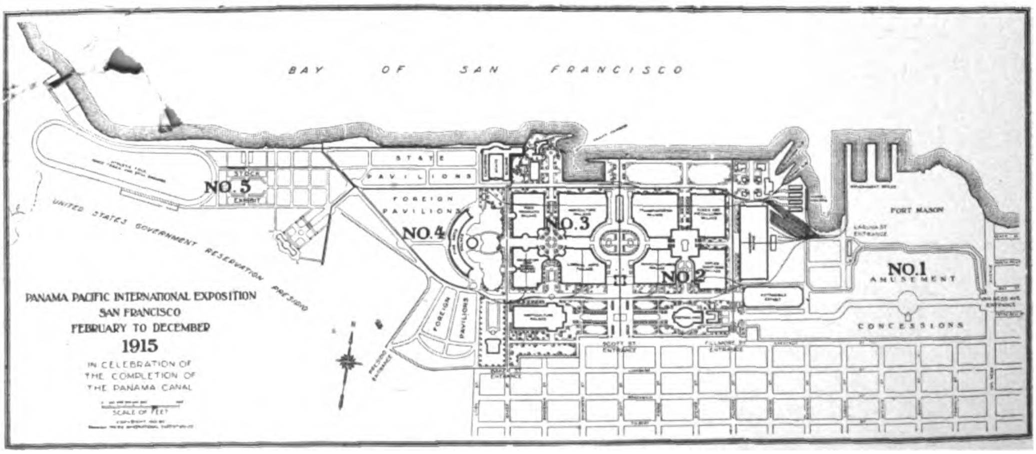
Likewise, the exhibit tonnage for previous expositions originated close to the cities in which these expositions have been held, whereas, in the case of this Exposition this exhibit tonnage will have to be transported a great distance.

We estimate that there will be paid to the transportation lines of the United States for the movement of exhibits and construction material in connection with exhibits, the sum of $5,000,000. This exhibit movement wll all take place during the last three months of 1914 and the first two months of 1913, with perhaps 75 per cent of the total during the first two months of 1915.

The amount of money, however, that is to be spent for the transportation of exhibits is small when placed alongside the estimate of money that will be spent in the movement of passengers to and from the Exposition, and the great advance movement of exhibitors, commissioners and other travel in the interests of the Exposition during the pre-Exposition period.

During the past year and a half hundreds of thousands of dollars have been paid out for passenger travel due entirely to the fact that preparations for the Exposition were going forward. Commissioners have been sent to nearly all the countries of the world and to all the States in the Union. Nearly all of these States and countries have, in turn, sent or will send during the pre-Exposition period, large commissions to San Francisco to select and dedicate sites and to make other necessary arrangements for their participation in the Exposition.

To date thirty-five foreign governments have


BAY OF SAN FRANCISCO
STATE PAVILIONS
STOCK
NO. 5
EXHIBIT
FOREIGN PAVILIONS
NO. 4
NO. 3
NO. 2
FORT MASON
NO. 1
AMUSEMENT
CONCESSIONS
UNITED STATES GOVERNMENT RESERVATION PRESIDIO
FOREIGN PAVILIONS
PANAMA PACIFIC INTERNATIONAL EXPOSITION
SAN FRANCISCO
FEBRUARY TO DECEMBER
1915
IN CELEBRATION OF THE COMPLETION OF THE PANAMA CANAL
SCALE OF FEET

accepted the invitation of the United States Government to participate and forty States of the Union have likewise arranged to officially participate. Before the opening day we believe that every State in the Union, and practically every country in the world will be ready to welcome to their respective pavillions exposition visitors.

Careful estimates have been made not only by the Exposition management, but by travel experts throughout the world of the number of people who will visit San Francisco in 1915. The traffic department has carefully checked and compared these estimates, and we submit below what seems to us to be a conservative estimate of the number of people to come from various parts of the world. These figures have been arrived at after taking into consideration the many suggestions received from railroad and transportation men.

From United States points east of Rocky Mountains	1,000,000
From United States points west of Rocky Mountains	250,000
From California outside San Francisco and Bay cities	750,000
From Canada, British Columbia, etc.	15,000
From Europe and Africa	50,000
From Alaska	5,000
From Hawaiian Islands	2,500
From Orient, Australia, New Zealand and Straits Settlements	10,000
From Mexico, Central and South America	50,000
Total	2,132,500

Never before has an exposition been held in a city or State that presented so many attractions to the visitor aside from the Exposition itself as does San Francisco and California. This fact will largely offset our disadvantage in being located so far from the centers of population.

California and the routes to California have been for many years extensively advertised and people from everywhere have a longfelt desire to visit the Golden Gate and se the many attractions in the way of natural scenery that lie between the East and the West.

The matter of passenger rates from the centers of population to San Francisco was of course a very important one in forming an opinion of the number of people to make the trip.

During the latter part of March the Transcontinental Passenger Association held a meeting in San Francisco at which rates of, approximately, one fare for the round trip were adopted from the territory covered by the member lines of this Association. Routing privileges were adopted by which the traveler may come west via one route and return via another, thus giving to the visitor an opportunity of visiting the many points of interest on the routes to California as well as points of interest in practically the entire State of California. Very liberal stop-over privileges were also granted.

To handle this heavy traffic the railroads, particularly those leading into California, have been compelled to spend large sums of money for additional motive power and equipment. Preparations for this unusual traffic have been going on for a year or more and when the Exposition opens the railroads will be well prepared for it.

To care for the large number of visitors after their arrival in San Francisco and to provide transportation facilities for them between the downtown districts and the Exposition grounds was another important problem that had to be solved. The site is so located that it is only served by two street car lines, both being of very limited capacity on account of excessive grades. The maximum capacity of these lines was 5,000 passengers per hour, while to properly care for Exposition travel a capacity of 50,000 passengers per hour was needed. To provide this the city of San Francisco voted a bond issue of three and a half million dollars and is now engaged in building municipal lines from the downtown district to the site. These lines will be over routes of easy grade and cars of large capacity will be operated.

The site is located on the Bay of San Francisco just inside the Golden Gate. Docks and slips have been built on our Exposition waterfront so that ferries and other boats from Oakland and the cities around the Bay may land passengers direct on the grounds. The site is very close to the business center of the city, being only two and a half miles from the principal hotel section. Forty per cent of the population of the city lives within two miles of the grounds. It is believed that these factors will provide, on account of the easy accessibility, a greater average attendance from our out-of-town visitors as well as the people living in our metropolitan area.

Extending the Express Companies' Field of Usefulness

By D. G. Mellor, Manager, Wells Fargo Food Product Department.

Editor's Note.—The Wells Fargo Express Company has set an inspiring example in its refusal to accept defeat at the hands of the Post Office Department in its unscrupulous efforts to drive this branch of the transportation service out of existence. Finding its activities greatly curtailed on account of the parcel post competition, the Wells Fargo Company has been regaining lost business, and in a measure, helping to solve the high cost of living, by the promotion of producer-to-consumer transactions. Railway traffic officials will read with interest Mr. Mellor's statement regarding the methods by which this experiment is being carried on.

ABOUT a year ago it became clear to the management of Wells, Fargo & Company, that some new traffic in considerable volume was necessary to make up the heavy loss in parcel business due to the parcel post, which began immediately after it came into existence January 1, 1913. Failure to develop something along that line promised to make it very difficult for the companies to continue business.

Wells, Fargo & Company, having always been very largely interested in the movement of food products, decided to extend its operations in that direction because it seemed to be the most promising field for new business and also presented an opportunity to go direct to the people with our large organization particularly adapted to be of real assistance in the nation wide effort to simplify distribution by more direct marketing in which everyone is interested.

The high cost of living is not really so much a question of the cost of living as of "living as we prefer to live," or, as we live, to "keep up with Lizzie." The argument has generally turned on what can be done to make the other fellow reduce our cost of living.

Legislation, the popular cure-all, has not been left out of the discussion. Every means has been suggested except the only one that can help much, i. e., to do something yourself. Really the question is intensely personal. For example, as long as men are satisfied to pay the Italian on the corner for polishing shoes instead of buying a box of blacking and doing the work themselves, there is little good reason for participation in the debate.

Most of us live more than our fathers lived and have more income to do it with or we couldn't do it long. If we were satisfied to live as people generally lived a few years ago, the additional income would considerably more than cover the increased cost of living. If it were not considered such terribly bad form to practice little economies, it would be quite possible generally to live well to-day on to-day's income and save something for old age and rainy days.

Why not apply economy and efficiency to the living problem? Men of prominence in the business world prophesy a period of prosperity during 1914. In times of peace prepare for war—adversity. Plan to live as well for less money and put the savings in the bank. How can this be done?

One way it is being done very successfully is through buying clubs in offices, shops, banks and many other places where several men are employed. One such club in the accounting department of Wells, Fargo & Company, in Chicago, has shown the way and is to-day ordering several thousand dollars' worth of butter, eggs, bacon, ham, poultry, etc., each month and saving the members a considerable amount. Smaller clubs in the service in other cities and in business houses all over the company's lines are taking advantage of the idea and facilities brought into existence by the Wells, Fargo order commission and food products department organized in August last.

Seven months' experience in the study of the food products problem—including growth, production, standardization and distribution—confirms the opinion held before work on the idea began. Few farmers are abl eto furnish a regular and continuous supply of produce, graded to satisfy the necessities or demands of markets and consumers. Improvement in this direction is most important. Organization among farmers offers the greatest chance for success.

The direct from farm to table idea is a popular one and possible of realization to a certain extent because some producers are able and willing to co-operate and because at times and under certain conditions produce can be economically moved by express directly from a producer to consumer.

Experience and a close analysis of the situation reveals obstacles which must be overcome before it will be possible to bring about a general movement of food products directly from producer to consumer. I do not mean by this that occasional progressive individuals and groups may not forge ahead of the rank and file and make it profitable to themselves. This is now being done in many cases. But in order to achieve success the drawbacks must be understood and allowances made.

The lack of any general standardization of farm produce is perhaps the thing above all others which deters the individual from dealing directly with the farmer. The individual wants to know what he is going to get before he places an order. The absence of common standards to which farmers conform makes it impossible for the customer to know with any certainty what kind of eggs, butter, poultry or fruit he will receive when he orders from the country.

Then again the farmer must have a steady supply; must never run out of produce, but must always supply it promptly on demand. How can he expect to compete with the city retail store which indirectly draws its supply from all sections of the country, from all lands of the earth?

Nor is the farmer a trained merchant or salesman. His energies are consumed by producing. He is not as a rule able to give that time to the retailing of produce which such a business demands. In the first place, in order to retail goods a market must be found. This always requires time and very considerable energy. In the second place, the routine of receiving orders and filling them, with the correspondence and bookkeeping which this involves, is frequently more than the farmer can attend to. Lastly, the complaints and adjustments which inevitably arise in regard to the quality and delivery of goods, would soon lead most farmers to decide that doing a retail business was not in their line.

The fact that many foods are of a perishable nature makes dealing at long distance difficult. Some food necessarily deteriorates in transit, and is eliminated by the retailer before he offers his wares to the buyer. In direct dealing the consumer would receive all such food. This also would be a source of dissatisfaction to most people. For these reasons it is difficult for the individual to market his produce by a direct method.

One way in which we are trying to be useful is in bringing together those who wish to sell and those who wish to buy. This the company has always done for those who sought its services. We are also endeavoring to bring about standardization of farm produce and experimenting with different forms of carriers.

Understand, what we are after is merely to create an amount of business for our transportation equipment—not to get up competition for the regularly organized food trades. We do not undertake to be merchants—to do any of the things the grocer does—but only to act as a sort of go-between, taking our profit out of the charges of transportation. The producer acts as his own jobber and the consumer acts as his own retailer, taking the goods in the large-size practical shipment unit and doing his own subdividing. We have no credit and we deliver an order to one consumer only. The consumer pays in advance and carries his own subdivision of the original package home.

In practice our establishment makes use of its 8,000 agencies and depends largely on its 25,000 employes and their friends and allies for the extension of the business. Through our industrial agents we stir up both producers and consumers to adopt our channel of distribution, and in some cases our facilities and the growth of the business have led to the formation of regular collectors at both ends of the line. But as a rule the unit of our trade is the shop-club or the neighborhood combination.

Every Monday our several main branches receive quotations from producers, naming prices for the coming week. We immediately put these into form lists (like that appended for last week) and mail them to all our consumer subscribers, who receive them surely by Tuesday. They make up their orders, hand them in at the nearest office of our company, and we do the rest. The date of the order carries with it the assurance of goods at the current week quoted price and quality, though, of course, the distance from production point to the consumer determines the delay in receipt of goods. We are very careful, however, to give the orders the utmost expedition. I have no idea of the aggregate of business developed, but it is surprisingly large. I know one station in Indiana which has built up shipments of eighteen tons in a single month.

To illustrate the economies, let me cite an experience in apples. A certain woman complained that she paid fifteen cents for a quart of apples in the city, which figures $4.80 a bushel. I knew a farmer who was proposing to sell his windfall apples for 75 cents a barrel, or 25 cents a bushel, and glad to get it. I persuaded him to pick them up, wipe them off and ship them to town in fibre boxes, which cost him eight cents each. He did it and realized $1 a bushel cash, or $3 a barrel. And the consumer got first-class apples for $1.35 a bushel, express prepaid, instead of at the rate of four times that. All we did was to bring the people together, and we got paid for the express business.

Many families in cities, however, are not able to order food products in the quantities mentioned because of the fact that in the modern apartment there are no satisfactory storage facilities for commodities of this kind. Consequently, we are suggesting buying clubs which order in quantity and divide the produce received among their members. Many such clubs are being formed among men in offices, stores, factories, etc., and are ordering large quantities of produce wherever satisfactory prices and supply can be found. A majority of the orders received through this department have been from buying clubs.

Experience forces one to the conclusion that a great educational movement is necessary before any considerable change in marketing methods can be brought about. All who have gone deeply into present conditions realize that the machinery now busy with distribution is doing a great work, that much of it is good and necessary, at least until something better is put in its place.

There is a constantly increasing quantity of food products for express movement to take the place of the business lost to the parcel post. The great volume, however, is grown in various widely separated sections of the country under changing climatic conditions, and must necessarily continue to move in large lots by either the cheapest or quickest medium to wholesale dealers, and from them to local markets and the corner store. It is not economically possible to furnish small lots to the millions of people direct from the field by express.

In the meantime the express will continue its effort to be useful to people interested in the carload and less carload movement that has always received serious consideration and careful attention. We must also try to satisfy the popular demand for data regarding produce obtainable in the country and furnish it to those who wish to try a service which the express only is in a position to offer. Orders and cash to cover country cost will be accepted by any agent who will issue a money order and send it with the order to the point where the produce can be had. The only charge made by the company is the regular express rate on the weight carried.

This system of marketing is satisfying a popular demand all over the country and while it is not claimed that the idea offers a solution of the cost of living problem, it does afford an opportunity for those who want really better produce at reduced prices to get it.

The Installation of a Profit-Sharing Plan and What It Accomplished

Note.—No excuse is offered by the editors for publishing an article which apparently has no direct bearing upon railway developments. The inspiration to be derived therefrom, rests upon a broader foundation, than that associated with any one industry. It is the practical application of the golden rule to business activities, and shows, in a remarkable manner, the highly beneficial effect to all concerned. It may not be possible, in the railway business, to use a plan of a similar character, but its application, in a broader sense, is possible everywhere, and the results obtained have invariably made the effort well worth while. Railroad officials, in the development of their pension plans, in their greater safety efforts and in an increasing desire to care for the moral as well as the material and physical welfare of their employes, are all giving evidence of their belief in the fundamental soundness of such a policy, and such officials will read with interest, the remarkable results obtained by the Clipper Belt Lacer Company, as set forth in the following paragraphs:

ON the eve of Christmas, 1912, Mr. Charles P. Foote, president of the Clipper Belt Lacer Company, of Grand Rapids, Mich., announced a profit sharing plan to cover the year 1913 and thereafter.

All through its early struggle the Company had looked forward to a time when its dreams in this direction might be realized, and a year previous the plan had been tried out in one department only—the hook carding department. The girls at that time were assured that all increased earnings would be theirs and that the piece rate would not be lowered no matter how much they made. The result of the experiment was that the girls from earning their former wage of $7.50 a week increased their earnings to a point where the more skilled operatives were making $12.00 to $15.00 a week and the less skilled averaged a little over $10.00.

The output per operative was increased nearly 50 per cent thus reducing the overhead cost to the management in spite of the great increase in wages paid.

Encouraged by this experiment the Company announced an enlargement of the plan, details of which were worked out by Mr. F. A. Stone, the secretary-treasurer of the Company, in the following Christmas letter:

Fellow-worker:

We have assembled here on the eve of another day that commemorates the birth of the Christ child, an event of great importance to us all, and which has much to do with that for which we are gathered here at this time.

Events have come along rapidly this year for us all, a great change having been made not only in our working place, but in the amount we have accomplished, and no small credit is due you for your part in it. The officers of the company wish at this time to thank you most sincerely for the interest you have shown, and ask that you accept with their best wishes for a Happy Christmastide, the enclosed little remembrance, which in a slight way expresses their appreciation of your loyal service, and their desire for its continuance during the year to come. For this, plans have been laid that should be of special interest.

When we started to card hooks, the young women were paid but $7.50 a week. We believed them capable of earning more, and wished them to do so, consequently established a piece basis for their work, agreeing never to lower the basis, regardless of the amount earned. The results are well known. We are given to understand that they are now the best paid for similar work of any in the city.

We desire the same to be true of our other departments, and therefore have determined that we will, beginning January 1st next, put all departments (where practicable) on a piece basis, making it possible for all employees to use their heads as well as hands, to further their interests, increase their wages, and incidentally, our business. We here wish to assure them also that we will not lower the established piece price, regardless of the amount earned.

Ever since the manufacture of the "Clipper" was started, an accurate cost of every operation has been kept, and the price established for piece work will be based entirely on this cost, therefore making it not only possible for you to make exactly the wages you have been receiving, but to largely increase them with a little added effort.

We have no doubt that the balance of our employees will do exactly as did the young women, rise to the occasion and make it possible for us to pay them much more in the year to come.

But this is not all. A nine hour working day will be established with Saturday half holiday during the entire year, without a reduction in pay. Also the management has felt for some time that employees so loyal and faithful, who had so large a part in making the business what it is, should share in its profits, and as a consequence has decided that beginning January 1st next, they should, and on the following basis:

All who at the end of 1913 have been with the company one year or less, will receive 5% (in cash) of the amount they have been paid during the year. All who have been two years in our employ, 6%, three years, 7%, and so on, 1% added each year until the amount has reached 10%, where it will remain indefinitely, provided the profits for each year warrant it.

This you will notice makes you profit sharers in the business, and vitally interested in its outcome. You have we believe, in the past year or more of service with us, done all you could to further our interests, but we trust in the year to come, this added profit will be an incentive for greater care and effort on your part.

Wishing you a Merry Christmas, and a bright and prosperous New Year.

Respectfully yours,
CLIPPER BELT LACER COMPANY.

HOW IT WORKED OUT.

On closing the books for 1913, it was discovered that over $3,000 were available for distribution under the plan outlined, one stenographer and one drayman earning the maximum ten per cent dividend.

The dividends were placed in the pay envelopes Christmas Eve of 1913, with a little note expressing the gratification of the Company that the amount was as large as it proved to be and expressing the hope of still better things in the year to come.

The good will that this distribution engendered was an inspiration to the management and many incidents came to their notice where this Christmas present helped an employe over serious trouble. Early in January the cottage occupied by one of the girls in the hook department, was totally destroyed by fire, not even the furniture or household effects being saved. The next day the girl and her mother called on the president and told him but for that Christmas check they would be paupers, as every cent they had in the world was in that little home. They had never felt they could afford to carry insurance as they were making payments on the home, but when the Christmas check came both mother and daughter decided that insurance on both the home and contents would be the very best use they could put it to. The fact that they were insured was therefore wholly due to this timely sharing of the year's profits.

DIRECT BENEFIT TO THE COMPANY.

Outside the indirect benefit of a closer bond of fellowship with their employes, the direct results of the profit sharing plan were as follows:

The yearly output was nearly doubled with only a slight increase in force.

Cost of the Clipper Belt Lacer reduced nine per cent in spite of the fact that the men making it increased their earnings twenty per cent.

Output of one important piece for which twenty cents is being paid on piece work, was so greatly increased, that figured on the former daily wage basis, it would have cost only eleven cents labor per piece.

Figuring all departments, the average gain to operatives was nineteen per cent and the average direct gain to the Company nearly nine per cent.

The indirect gain to the Company because of more hearty co-operation of operatives with each other and with the management cannot be expressed in figures.

There will be no "labor troubles" in the Clipper Belt Lacer plant as long as the Company continues to pursue the policy of giving their employes the large share of the increased earning. A case in point was cited: One very capable workman was so embittered by real or fancied wrongs in the old country and in earlier experiences in America that he was continually preaching anarchy and endeavoring to stir up trouble. He had consistently scoffed at the sincerity of the management of the Company in their profit sharing plan and had lost no occasion of warning his fellow workmen that this was only a trick to put a yoke around their necks. Fortunately he had few followers, as he was a comparative newcomer and the older employes trusted the management.

When he found over $70 extra in his Christmas envelope, he went straight to the president's office and with tears coursing down his cheeks asked to be pardoned for all the harsh things he had said against the Company. He is now one of the most efficient and loyal men of the whole force.

The plan will be continued in force indefinitely, and will, of course, become more expensive in proportion to the added years of service of employes who stay.

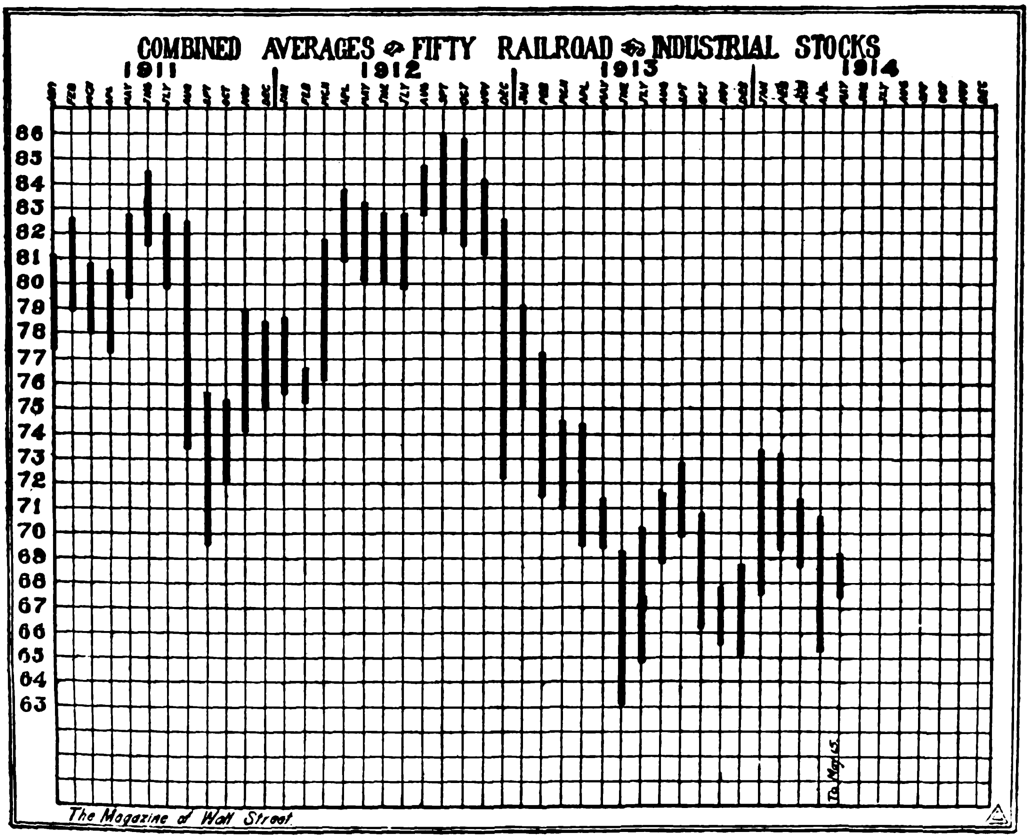
Financial

The Outlook.

WHILE the outlook appears to be little, if any more favorable than it was a month ago, undoubtedly a more cheerful feeling prevails in some quarters. This may be due to the fact of a growing conviction that Mexican affairs will be settled without the necessity of a long and costly war, and to the prevailing belief that the Interstate Commerce Commission will soon render a decision permitting the Eastern carriers to advance their freight rates. One thing is certain, there is no single event awaited with more anxiety by the business interests than this decision of the Commission's in the rate case, and on it hinges to a greater or less extent, the immediate future prosperity of the country. As Spencer Trask and Company in its monthly letter puts it: "Once this rate question has been settled in a spirit of broad fairness, we believe that a sigh of relief will go up from one end of the country to the other, and while it is quite conceivable that the relief may not translate itself into an instant blowing in of furnaces now cold, we do believe that one of the most perplexing and dangerous factors will be removed and the road to prosperity made that much easier."

In making this statement Spencer Trask and Company but echoes the opinion of financial authorities both at home and abroad. There has been several important orders placed recently for railway equipment which have somewhat brightened the steel outlook and is an evidence of what may be expected if the rate case is decided favorably to the carriers.

The attitude of the present administration towards business, however, is still a source of unrest and anxiety. Some of the bills which Congress has under consideration are drastic in the extreme and the feeling of unrest which is engendered by the evident purpose of Congress to continue to interfere with business to an extent never before attempted, cannot be ex-



pected to show much improvement until the administration's policy has become more clearly defined. How these Congressional activities are viewed by business men is well expressed in a statement recently published by the New York Chamber of Commerce, as follows:

"A survey of the history of the remarkable industrial and business development of this country indicates that its achievements have been, in the main, due to the initiative, energy, enterprise and bold courage of an immense number of individuals breathing and operating in the free air of untrammeled opportunity, in which alone true genius can work and survive. To shackle the genius of this country, to limit individual freedom and initiative within the confines of parental government direction other than the well defined limits now understood and recognized as inconsistent with moral law, modern ethics, and the public welfare, would be to set brakes upon the splendid spirit of our people by which all our achievements have been inspired, if not indeed to break down the march of progress, and to force us to the rear in that international contest for the world's business by which alone this country can continue to grow and reach the fruition of which there has heretofore been such ample promise."

To sum up the situation, a favorable solution of the Mexican problem would undoubtedly prove helpful and good crops, which now seem assured, will put heart into those communities whose purchasing power largely depends upon satisfactory harvests. On the whole, however, it is our opinion that there can be no decided or sustained improvement unless the rate decision is such as to permit the carriers to finance their properties along progressive lines.

Railway Financing.

IT is reported that the proceeds of the $8,000,000 general mortgage four per cent bonds purchased recently by Kuhn, Loeb and Company from the Chicago and North Western, are to be used for improvements and betterments. These bonds are part of an authorized issue of $165,000,000 of which $53,327,000 has been sold. They are selling on a basis to yield four and one-half per cent. Foreign agents of the Lake Shore and Michigan Southern have been able to sell in London and Paris, about $20,000,000 of the one year notes dated May 15th. This capital is to be employed to meet the $10,000,000 or thereabouts of Sterling notes due in London on the date mentioned and to reimburse the treasury for cash used in meeting earlier maturities of the year and any various outlays for improvements. The notes were sold on a basis of about four and one-half per cent but do not carry interest.

The directors of the Northern Pacific have under consideration a new financial plan for providing for the Company's needs for a number of years to come. The current year's requirements are about at $25,000,000 of which $10,000,000 consists of notes maturing July 9th. The directors have in mind the creation of a new blanket mortgage amounting to $300,000,000. It is believed that no increase in the capital stock is contemplated.

E. W. McKenna, the railroad expert engaged by the Wallace Committee of holders of Rock Island four per cent collateral bonds, as to the financial needs of the Chicago, Rock Island & Pacific Railway, estimates that $65,000,000 could be spent profitably in the next five years to produce substantial operating economies. In the supplementary report he reduces this estimate by figuring on the needs for three years, instead of five. He finds that 20,000 freight cars are in bad condition, and would scrap 16,000 of them. The remainder he thinks could be repaired to furnish a few years' more service. Mr. McKenna says in part: "If the sum of approximately $65,000,000 is applied as suggested, certain economies will be produced, and an improvement in the present property will be secured, which will put a stop to the deterioration, and place the property in such physical condition as to secure a great proportion of the traffic of the country it serves. There are about 20,000 cars which should be retired; possibly 4,000 of these cars will be found to be in such condition that their life can be extended for from two to five years. This would mean a retirement of 16,000 cars. The present cost per car for repairs averages about $79 per car per year. An investment of $15,000,000 in 15,000 new cars would produce an efficiency of equipment at least 50 per cent greater than the cars retired, and the maintenance cost of these new cars for the first five years should not exceed $25 per car per year. It will be observed that in the tabulation of prospective capital requirements, which contemplates about $41,000,000, there is an estimated saving in operation of $4,400,000 per annum.

"It is assumed further that the improved conditions of the railway and its equipment would produce an increase of revenue over existing conditions of at least $5,000,000 per annum, of which 30 per cent would be net earnings. The investment of this money would also enable the railway company to carry on its maintenance program from January to July, which would yield a saving of at least $500,000 per annum."

In a supplementary report made as a result of conferences with President Mudge, Chairman of the Board Schumacher, and members of the Stockholders' Protective Committee, Mr. McKenna suggests that capital requirements be reduced from a five to a three year basis.

The Atlanta & Charlotte Air Line Railway Company, represented by the committee appointed under an agreement dated May 1, 1906, and the Southern Railway Company have tentatively entered into an arrangement which calls for an issue of first mortgage bonds of the Air Line Company to the amount of $20,000,000, to bear interest at not to exceed five per cent, per annum. Of this amount $5,500,000 will be issued immediately and sold, and the proceeds used for the purchase and cancellation of an equal amount of bonds now held in the treasury of the Southern Railway Company. The balance will be sold from time to time as it may be deemed desirable by the Directors of the Southern Railway Company and the proceeds turned over to that company for the sole purpose of double-tracking and improving the Air Line Railway's property and terminal. The arrangement provides for an agreement modifying the agreement previously made, so that the dividend may be increased on the stock of the Air Line Railway Company to an unqualified distribution of nine per cent per annum without regard to earnings, in lieu of the existing provision for a maximum seven per cent dividend conditioned upon the amount of annual gross earnings. In consideration of the above, the stockholders of the Air Line are to agree to an option to be given to the Southern Railway Company to purchase their holdings upon due notice or any dividend date at $250 per share in cash. The Air Line stockholders are being urged by the committee to deposit their shares as promptly as possible in order to make the agreement effective.

Gross and Net Earnings for March.

RAILWAY earnings for March, 1914, show up rather better than they did for the corresponding month of 1913. This does not, however, indicate any real improvement in view of the fact that abnormal conditions greatly affected railway earnings during the latter period. It will be remembered that it was in March, 1913, that the devastating floods visited the middle and middle western sections of the country and played havoc with railway operations and earnings besides adding enormously to expense accounts. Besides this, there is a favoring influence in the present year's results, in view of the fact that in many bituminous coal mining districts, there was an abnormal activity during March owing to the fear that mining operations would be suspended on April 1st, on account of the expiration of the old wage scale. These factors in themselves would appear enough to create the difference which exists between the results of the two months, without the consideration of any other factors.

The "Commercial and Financial Chronicle" reports the gross earnings for 848 roads for March, 1914, to be $250,174,257, as against $249,514,091 in March, 1913. Operating expenses in the former month totaled $182,180,306, while in 1913 they amounted to $184,524,668. Net earnings for March totaled $67,993,951, compared with $64,998,423, a gain of over $3,000,000 in favor of this year's results. It is evident from these figures, however, as above stated, that the better showing in net is not due to any real improvement but rather to the abnormally poor showing made in 1913, owing to the extraordinary conditions with which the carriers had to contend. The following table shows the principal changes in net earnings in March as compared with a year ago for some of the more prominent roads of the country.

Principal Changes in Net Earnings in March.

	Increases.
Baltimore & Ohio	$851,636
Chicago Burl & Quincy	808,464
Pennsylvania	a789,029
Chic Milw & St Paul	663,825
Chicago & North Western	557,903
Illinois Central	474,050
Atch Topeka & Santa Fe	389,655
Louisville & Nashville	332,355
Rock Island	292,022
Wheeling & Lake Erie	232,591
Chesapeake & Ohio	215,276
Boston & Maine	210,585
Missouri Pacific	164,313
Union Pacific	141,893
Bangor & Aroostook	128,402
Vandalia	108,911
N. Y., N. H. & Hartford	103,618
Chicago St P M & O	102,775
Representing 18 roads in our compilation	$6,567,363

	Decreases.
Delaware & Hudson	$371,874
St Louis & San Francisco	330,990
Southern Railway	275,223
Northern Pacific	255,216
Southern Pacific	240,577
Philadelphia & Reading	227,342
Bessemer & Lake Erie	221,043
Minn St P & S S M	192,494
Pere Marquette	179,130
Cleve Cin Chic & St L	162,969
Erie	135,038
Delaware Lack & West	129,325
Atlantic Coast Line	122,079
Western Maryland	120,777
Phila Balt & Wash	119,610
San Ant & Aransas Pass	105,941
N Y Cent & Hudson River	b104,353
St Louis Southwestern	102,799
Representing 18 roads in our compilation	$3,396,780

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a This is the result for the Pennsylvania RR., together with the Pennsylvania Company and the Pittsburgh Cincinnati Chicago & St Louis, the Pennsylvania RR. reporting $28,169 increase, the Pennsylvania Company $368,342 gain and the P. C. C. & St. L. $392,518 gain. Including all lines owned and controlled which make monthly returns to the Interstate Commerce Commission, the result is a gain of $708,631 in net with a loss of $29,994 in the gross.

b These figures merely cover the operations of the New York Central itself. Including the various auxiliary and controlled roads, like the Michigan Central, the Lake Shore, the "Big Four," the "Nickel Plate," etc., the whole going to form the New York Central System, the result is a loss of $212,486.

The "Commercial and Financial Chronicle" has also issued its preliminary statement covering railway gross earnings for April, which shows in brief, that there is a loss for the month of $4,466,008 or 6.28 per cent as compared with the results for April, 1913. When it is considered that flood conditions were still affecting earnings in the latter period, it must be concluded that the showing for April of the present year, is far from satisfactory. Furthermore, losses in the case of individual roads are not only large but are general, coming from all parts of the country and from all classes of roads, unmistakably indicating a general and significant decrease in commercial activities. The following table, also prepared by the "Chronicle," shows the principal changes in gross earnings in April, as compared with a year ago.

Principal Changes in Gross Earnings in April.

	Increases.
Chesapeake & Ohio	$675,740
Mobile & Ohio	197,344
Illinois Central	155,352
Cin New Orl & Tex Pac	146,047
Chicago Great Western	71,437
Seaboard Air Line	44,022
Yazoo & Miss Valley	30,141
Representing 7 roads in our compilation	$1,320,083

	Decreases.
Canadian Pacific	$2,040,000
Great Northern	1,020,221
Minn St P & S S M	311,825
Grank Trunk	309,089
Louisville & Nashville	254,672
Buffalo Roch & Pittsb	240,964
Wabash	235,226
Missouri Pacific	207,236
Colorado & Southern	190,335
Denver & Rio Grande	146,600
Missouri Kansas & Tesas	138,226
Canadian Northern	135,300
Chicago & Alton	117,989
Chicago Ind & Louisv	110,548
Western Pacific	95,100
Internat & Gt Northern	67,000
St Louis Southwestern	60,000
Toledo St Louis & Western	51,983
Southern Railway	41,487
Grand Trunk Pacific	31,938
Representing 20 roads in our compilation	$5,811,739

Operation

Handicaps to Increased Train Movement.

ANSWERING the criticism that the railroads could increase their revenue by "speeding up" the movement of freight and increasing the average distance of twenty-two miles a day when calculating both fast and slow service, George H. Campbell, assistant to the president of the Baltimore and Ohio has made a study of this phase of the American transportation question which is illuminating to shippers and the public.

"There are several things entering into the transportation of freight with which the public may not be familiar," said Mr. Campbell, in connection with his investigation. "The bald statement that cars are moved 22 miles a day is misleading and the impression naturally would be that something is wrong. In the first place, a railroad cannot always store its idle cars near to the place where they will be needed next. The freight cars are collated in order that they may be kept under supervision. Then when cars are ordered it is necessary to move them to the industry, which takes time but is calculated against the average movement.

"Other delays are encountered over which the railroads have no control. Shippers are allowed 48 hours in which to load cars—two whole days that likewise enter into the calculation. The two days do not include Sundays nor holidays; and in the case of many articles of commerce it does not include rainy days. After cars have started in transit the consignees have 48 hours additional in which to unload shipments, and this, taken in connection with the time taken to move over the road is balanced against the distance the shipments are transported. That explains very largely why the average day's run of freight cars is small. Even though a carload of goods were shipped only five miles, there would be four days' time allowed for loading and unloading.

"While the average capacity of freight cars to-day is more than double what it used to be, the penalty for delays beyond the time limit prescribed by the car service rules remains the same. The shipper still pays $1.00 a day when using the car for storage purposes.

"Further than this, from five to seven per cent of a railroad's freight car equipment is undergoing repairs; so that a road that has 100,000 cars often has between 5,000 and 7,000 cars in the shops and out of service. This is a further factor which lessens the average movement of shipments as set forth by statistics.

"Taken separately, however, fast freight service is entirely different and makes a far better showing than the average. Fast freight trains on the Baltimore and Ohio, for instance will cover 350 miles a day. The next fastest service is moved at the rate of 190 miles a day. The speed average of coke cars is high, as is that of cattle, which usually are loaded in a few hours. Refrigerator cars, which also are quickly loaded, are put through to their destination without delay.

"Viewing the transportation question from this phase, it will be seen that the railroads are not altogether to blame for the slow average movement of freight. The railroads are trying to obviate the delays at shipping points, but that is another big problem, the solution of which lies largely in the size of terminals."

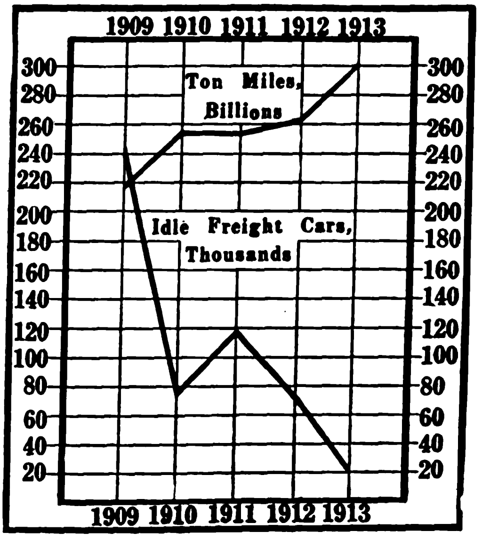
A Railroad Barometer.

THE accompanying chart which was prepared by the New York "Annalist" shows the average number of idle freight cars in contrast with the number of tons of freight hauled one mile by the railroads of the United States during the last five fiscal years, which end June 30th.

As might be supposed, the former line exercises a strong influence on the latter, and a decline in the number of idle cars is invariably followed by an increase in ton mileage—which, of course, means also an increase in gross earnings; while an increase in idle equipment is always coincident with a decrease in ton mileage and gross earnings.

As the average number of idle cars so far during the current fiscal year has been much larger than it was in the twelve months ended June 30th last, a decline in gross was inevitable, and this condition is shown by the monthly statements of important roads.

A Railroad Barometer



The Car Situation.

THE latest report of the American Railway Association shows that on June 1, 1914, there was a total of 242,572 idle cars as compared with 60,291 on May 31, 1913. There was practically no shortage in any section of the country. These figures strikingly illustrate the tremendous let up in commercial activities within the past year and not since 1909, has there been such a large number of idle cars on any given date. The following chart presents a record of car surpluses and shortages in the United States for the past seven and one-half years.

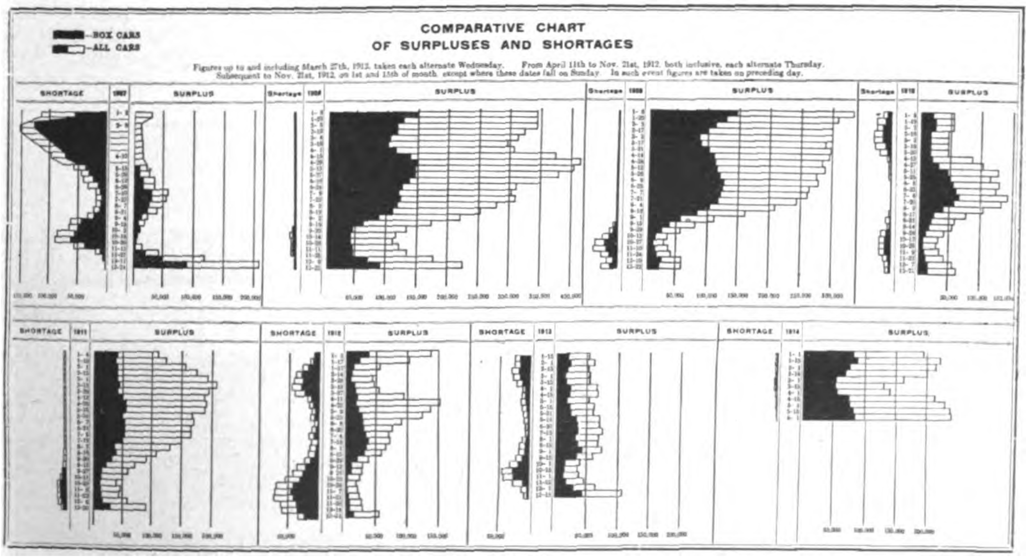
Contributory Negligence in Railway Accidents.

IN order to ascertain to what extent contributory negligence is responsible for accidents at railroad crossings of the public highways, a series of observations was conducted recently by the Baltimore and Ohio System which showed a reckless disregard on part of the public for personal safety and practically complete failure to heed the warning of watchmen, signals or crossing regulations.

A record was kept at several of the busiest crossings on the Baltimore and Ohio Southwestern and the Cincinnati, Hamilton and Dayton Lines, and out of a total of 32,079 instances of the railroad tracks being crossed by motor vehicles, teams and pedestrians, only 298 were recorded where the rule of stopping, looking and listening, or stopping to receive a signal from the watchman before proceeding were observed, which shows less than one per cent efficiency by the public. Of the inefficient, 18,335 persons failed to get signals and kept moving over the crossing without looking in either direction; while 8,776 persons, failing to stop, looked in but one direction and 4,680 other persons failed to stop and depended only upon sight to insure their safety.

The observations were made at three street crossings in Cincinnati, also at North Vernon, Seymour, Vincennes and Rushville, Ind., East St. Louis, Springfield and Tuscola, Ill., and at Hamilton, Dayton and Celina, Ohio. At most of these crossings there are two or more tracks and in the larger cities an average of from ten to thirty-five trains move over the crossings each hour of the day.

In Cincinnati 184 motor vehicles crossed the railroad tracks without one strict observance of the rules. There were but 60 observancs by teamsters of a total of 1,743 vehicles that crossed the tracks and of the 7,010 pedestrians only 376 took the proper precaution against accident. About the same ratio of efficiency was displayed by people who used the crossings in the other cities and towns, although in Vincennes, 115 motor vehicles complied strictly with traffic regulations, out of a total of 135 that crossed the tracks. On the other hand, at Springfield not one observance of the crossing regulations was noted out of 245 motor vehicles that passed over the railroad tracks. The best record of pedes-



trians was made by the citizens of North Vernon, 3,176 of whom crossed the tracks with 806 instances of full observance of the rules.

Safety Movement on the Chicago and Great Western.

G. O. PERKINS, acting chairman of the executive safety committee of the Chicago and Great Western Railroad, has supplied the following interesting account regarding the development of the safety movement on his Company's lines:

The Great Western began the organization of its Safety Bureau in 1912, and nearly a year was required to put the organization in first class working order, and to arouse the general interest in the movement.

The organization has worked on the theory that it was necessary for the Company to establish safe conditions in order to induce the men to adopt safe practices. So far, the Company has spent over $10,000 in establishing safe conditions on the recommendation of the Safety Bureau. The most notable monument of the safety movement is the bridge across the tracks at Oelwein, Iowa, for the use of shop employes, which is shown in the attached illustration. Safety appliances have been placed on machines in shops, warning signals installed at dangerous crossings, railings built at dangerous places in yards and around stations, and changes made where liability to accident could be reduced by so doing.

Our figures for 1912 show a reduction of nineteen per cent in the number of personal injury cases as compared with the previous year and the figures for the first four months of 1914 show that a still greater improvement over 1913 is being effected.

The organization consists of an Executive Safety Committee, with full jurisdiction over the operation of the Bureau, a Division Safety Committee and the following sub-committees on each division:

Transportation,
Mechanical,
Maintenance of Way,
Local.

The main shop at Oelwein, Iowa, is treated as a division and has sub-committees for each department.

The Division Committees are composed of the Chairman of the Transportation, Mechanical and Maintenance of Way Committees, to which are added the Claim Agent and the Chief Dispatcher.

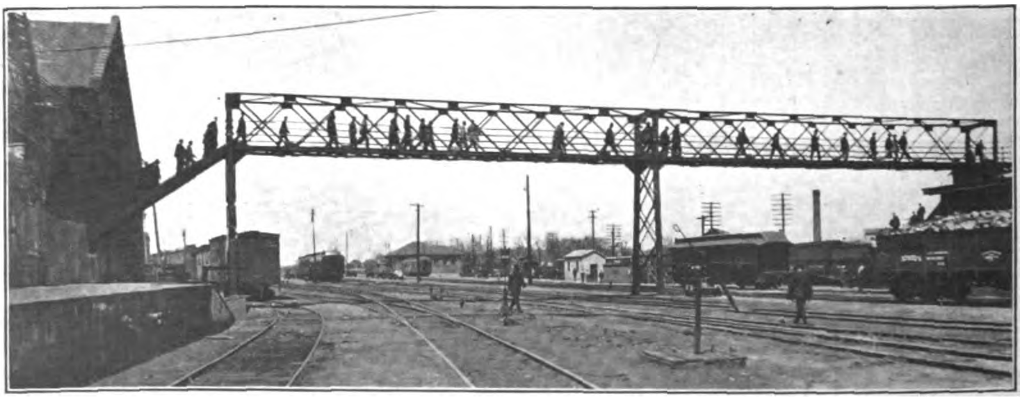
The Executive Committee is composed of the Chairmen of the Division Committees, to which have been added the Chief Engineer, Superintendent of Motive Power, Superintendent of Telegraph, Chief Surgeon, the Instructor and Examiner on Train Rules, and the Air Brake Instructor.

Each local and sub-committee holds meetings once a month, and makes report to its Division Committee. The Division Committee meets monthly and makes reports to the Executive Committee, which holds its meeting on the last Friday of each month. At these meetings accidents and personal injury cases are analyzed and discussed and efforts made to find, if possible, improved methods to reduce their number. Recommendations for promoting safe practices are discussed and if considered practicable are recommended for adoption. In influencing the rank and file, we depend largely on personal contact of the Committeemen with the men. All employes are encouraged to make suggestions for the benefit of the movement.

In shops weekly inspections are made by the committees to see that safe conditions and practices are being maintained.

Division safety rallies are held from time to time at which papers are read by the men and stereopticon and moving picture displays, which have an educational bearing on safe practices, are given. One large Safety Rally for the system was held, which brought together over 2,500 employes. Addresses were given by officers and subordinate employes. There was good music, moving pictures, a ball game and a dinner to all employes and their families. The effect of this meeting was highly beneficial and the increased interest of the men in the movement was very noticeable.

We try to keep the subject of Safety before the men at all times. Safety signs are placed in cabooses, around yards, and in shops. Safety bulletins are frequently issued. The subject is dealt with in our employes' magazine, and in each issue of the magazine is published an "Honor Roll" of the men who, by their vigilance, have detected unsafe conditions and thereby probably averted an accident.



THE GREAT WESTERN'S SAFETY BRIDGE AT OELWEIN, IA.

Safety Developments on the North Western.

THE Chicago and North Western Railway under the able leadership of Ralph C. Richards, chairman of its Central Safety Committee, has made a record for greater safety which is well worth being proud of. This movement was originated on the North Western's lines in 1910, and during the forty-six months that the organization has been in existence, up to April 30, 1914, there are shown 134 fewer employes killed, a decrease of 32 per cent, 8,720 fewer employes injured, a decrease of 26.2 per cent, 857 fewer passengers injured, a decrease of 23.7 per cent, 172 fewer outsiders killed, a decrease of 19 per cent and 173 fewer outsiders injured, a decrease of 7.5 per cent.

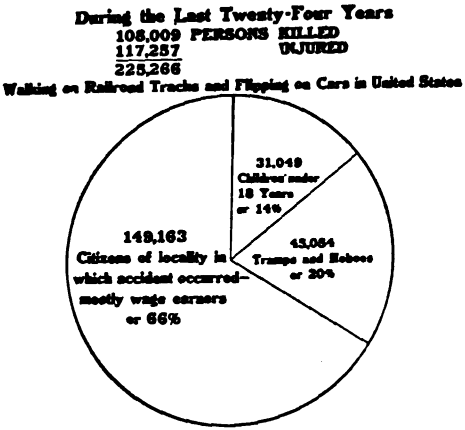
During this period the mileage of the North Western Lines has increased between four and five hundred miles, the number of men employed has largely increased, as has the number of trains run.

So splendid have been the results obtained by the North Western, that Mr. Richards is now unanimously hailed as the "father of the railroad safety-first movement." The fame of his organization has reached the Government railways of Japan, whose vice-president has adopted the safety organization after hearing of the marvelous results which have been obtained. It also has received gratifying recognition in Europe, and has been awarded a commemorative medal by the International Exposition of Hygiene.

Up to the present time, nearly 200,000 miles of railroads including nearly all of the more prominent systems, have adopted organizations identical, or very similar to that which has proved so effective on the North Western. Activities of a similar character have spread to industrial organizations and at no time in the history of the world has a greater or more united effort been made towards the conservation of human life, particularly in so-called hazardous occupations. In fact, the movement has spread to such an extent that in a number of the larger cities, safety organizations have been formed whose general purpose is to study the general safety movement not only in its effect upon certain industries but upon all hazardous occupations. These united efforts are proving highly beneficial to those engaged in the scientific development of this work and are already having a marked effect upon the number of accidents reported from a vast variety of occupations. The work is such as to produce unbounded enthusiasm in its development and means unlimited benefits for future generations.

The Results of Trespassing.

THE Central Safety Committee of the Chicago North Western Railroad Company, has been distributing the following figures and diagram showing the results of trespassing on the railroads of the United States. A further argument is hardly necessary to indicate the desirability of adopting every possible method to abolish this disastrous practice.



Why not make and enforce Laws to prevent this Slaughter?

Effort to Suppress Trespassing on Baltimore and Ohio.

PURSUING the campaign which the railroads of the country are waging against trespassers and others who use the property unlawfully, the Baltimore and Ohio Railroad has adopted a plan of impressing upon town and country authorities the toll of human lives secrificed needlessly because people remain impervious to danger.

Agents of the Baltimore and Ohio are asked to discuss with Justices of the Peace and other town and county authorities, to acquaint those entrusted with the enforcement of the law with the facts pertaining to the loss of life due to trespassing. The authorities are being asked to co-operate with the railroad in the campaign it is conducting, to the extent that when tramps, unlawful train riders and others are apprehended they be taken in charge by the agents of the law. Suggestions are being requested from the authorities consulted and their recommendations will be forwarded to the railroad officials for due consideration.

Soliciting Public Aid in Safety-First Movement.

IN an effort to minimize accidents and deaths to trespassers and others on railroad property, and as another step in its "Safety First" campaign, the Southern Pacific Company is posting in conspicuous places on its properties everywhere along the Pacific System large placards appealing for the assistance of the public. The cards read as follows:

"We solicit your co-operation in preventing death and injury to yourself, our patrons and the community at large. Stop to look and listen before passing over railway grade crossings. Refrain from and discourage trespassing upon railroad property. Be careful when waiting for trains or using the company's facilities.

"It is not safe to start over a railway crossing without first stopping to look and listen, to get on or off trains while in motion, to stand near edge of platform when trains are passing, to cross over ahead of an approaching train, or pass closely behind a train standing, to stand or walk upon tracks around stations and elsewhere, to allow children to play around the station, tracks and cars.

"Trespassers: In the United States, nearly

54 per cent of all persons losing their lives on railway premises are trespassers. If record of recent years maintains, fourteen people were so killed yesterday, fourteen will be killed to-day and fourteen to-morrow. Think of that—nor are they all tramps.

"Automobiles, Pedestrians: More than 69 per cent of drivers of motor vehicles pay no attention to a railroad crossing. Likewise, 34 per cent of drivers of horse drawn conveyances and 37 per cent of pedestrians take no precaution to guard against accidents. Help us to reduce these percentages.

"Grade Crossings: Grade crossings are unavoidable. Without them, few railroads could have been built in this country. They are one of the inconveniences of progress, to be eliminated just as rapidly as practicable. The railroads are doing their best, but it takes time and a great deal of trouble. Meanwhile the public demands that trains be run on time. To do so, involves speed over crossings. We appeal to the driver of every vehicle and every pedestrian before crossing a railroad track to stop, look and listen."

GET THE HABIT
SAFETY
LV
FIRST
THIS MEANS YOU

Electrically Illuminated Sign Under Which All Employes of the Sayre Shops of the Lehigh Valley Railroad Pass.

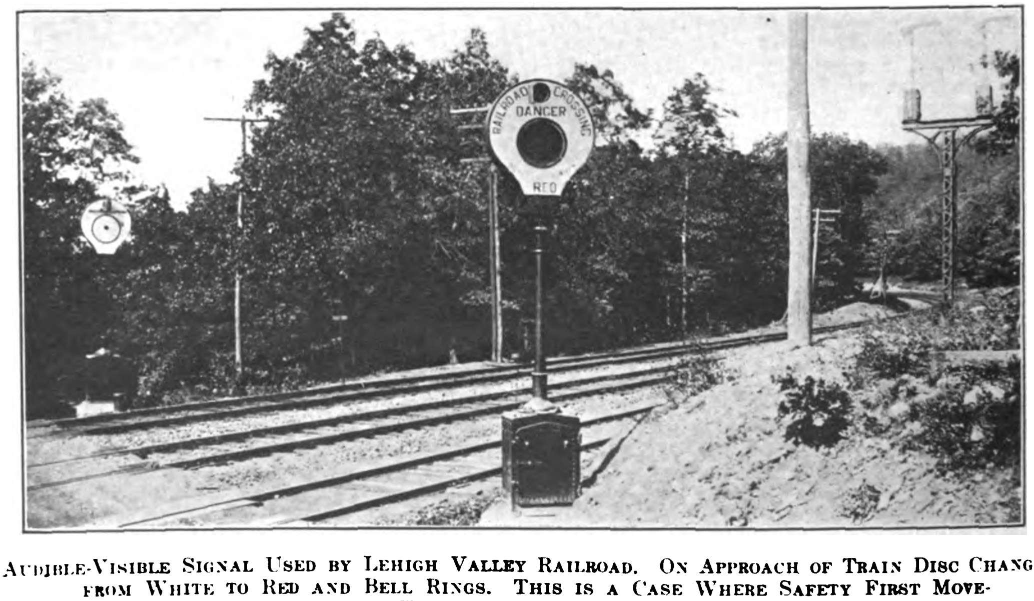
The Progress of the Safety-First Movement on the Lehigh Valley.

THE safety-first movement on the Lehigh Valley Railroad has resulted in a pronounced saving of life. It has been in operation now nearly two years and during the first year there was a falling off in deaths and injuries which showed from the start the value of this movement. The decrease of deaths among trainmen, enginemen, conductors and firemen was sixteen per cent and the decrease in injuries was eighteen per cent. Among switch-tenders there was a decrease in deaths of 100 per cent and in injuries 25 per cent. The number of trackmen and bridgemen killed was lessened by 31 per cent and those injured by 56 per cent.

When the second year's report is completed it is anticipated that the showing will be much greater as the safety-first movement has taken a firm hold in the minds of the railroad's employes. The work is also much better organized now.

The advantage of this work is that it is cumulative. Men get the habit of taking precaution, they become more cautious as time goes on and just as carelessness breeds carelessness, the idea of safety breeds greater caution.

The work has been carried on among employes of the Lehigh Valley Railroad with the assistance of safety committees on each division. There is a division safety committee which reports to the general safety committee. All the important operating officials connected with each division are members of the division safety committee and the general safety committee includes in its membership the general manager of the railroad, his assistant, the superintendent of transportation and superintendent of motive power.



Audible-Visible Signal Used by Lehigh Valley Railroad. On Approach of Train Disc Changes from White to Red and Bell Rings. This is a Case Where Safety First Movement Touches the General Public.

To stimulate interest it was announced when the campaign was started that awards would be given to men who made the best safety suggestions during the year. For this purpose the railroad was divided into seven divisions, six operating divisions and one in the shops. Suggestions were made by any employe to the division committees which reported to the general safety committee. Many of these suggestions were of purely local significance but were of immediate advantage in enabling division superintendents to correct unsafe conditions at once. A large number of general suggestions, however, were presented during the year and the general safety committee finally met and made the awards. This consisted of a month's vacation with pay.

As not unnatural in a movement of this kind, its significance did not reach, at first, to all the employes of the road, and many employes were under the misapprehension that suggestions were to come only from members of division safety committees, but the fact that the awards were made in all cases to men who were not members of any safety committee has eradicated that false impression. Now the safety suggestions are much greater in number and the safety movement as a whole is much more active. At a recent monthly meeting of the safety committee of the Mahanoy & Hazleton Division of the Lehigh Valley, eighteen separate safety suggestions were considered and all were of practical importance. Sixteen were acted upon favorably, one was referred to another department for action and a remedy for the eighteenth already proved to be in practice.

From a practical operative point of view, the greatest result of the movement has been the discovery and reporting of broken wheels and rails. Our men on trains and on track work are always on the lookout for defective equipment. Their eyes have been trained to watch for defects and in effect every man connected with the operative department of the railroad has become an inspector.

The personal injury side of the situation hardly needs a comment. The number of arms, legs, and lives saved is in itself worth many times the cost and the effort involved. As a matter of fact the cost of this movement has been hardly more than nominal and the results have been incalculable. In pursuing the work in the future, the plan of the Lehigh Valley Railroad, as now outlined, is largely educational. In fact, the whole safety first campaign is an educational movement. It can be stimulated by the offer of reward, but what counts is the decrease in deaths and injuries.

The Northern Pacific's Efficiency Bureau.

On January 1, 1913, the Northern Pacific Railway established what was designated as a Bureau of Efficiency, one of the functions of which was to provide ways and means to prevent accidents to persons. At the close of 1913, statistics were compiled contrasting the first six months of the year with the last six months. These figures showed a decrease of fifty-eight per cent in the number of persons killed, and an increase of less than one per cent in the number of persons injured, although in this connection, it should be taken into consideration that there was an increase in the average number of men employed in the latter period of eight per cent, so that the net results were a decided decrease.

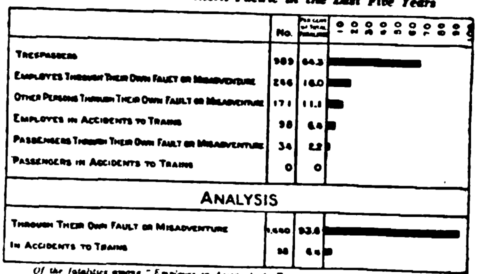
In contrasting serious injuries with minor injuries it was found that during the year there was a considerable decrease. For example, during the month of January, 1913, seventy-two per cent of the employes injured were off duty more than three days on account of their injuries, while in the month of December only 38 per cent of the employes injured were off duty more than three days. For the first four months of 1914 as compared with the corresponding period of 1913, there has been a decrease in the number of employes killed of 70 per cent and in the number injured of 18 per cent. It might be interesting to state that approximately one-third of the employes killed, and one-fourth of those injured, are foreign track laborers, men whose mentality is only that of a normal educated child of fourteen or fifteen years of age, who have been taught certain things in connection with the work they perform, but who have not been taught how to avoid the dangers which are incidental to their surroundings, and whose order of mentality appears inadequate to protect them against dangers in which they have not been specifically instructed. It is obvious therefore, that work along this educational line is necessary in order to reduce the fatalities and injuries which confront this class of labor.

Remarkable Success of Safety First on Southern Pacific.

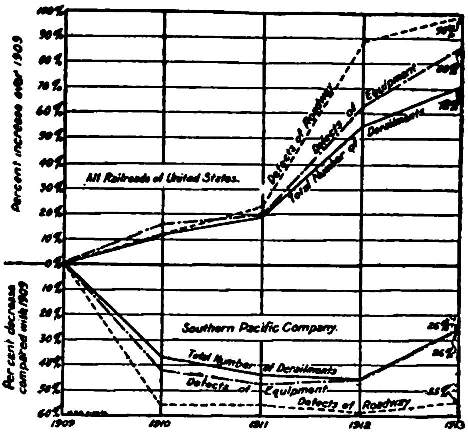
The following interesting diagrams appeared in an article published in the New York "Annalist," of May 11th, which is based on an interview with Julius Kruttschnitt, the chairman of the Executive Committee of the Southern Pacific. Mr. Kruttschnitt believes that the Southern Pacific is the only railroad in the United States that measures its accident rate by an accurate scale. Industrially, the standard of risk is per thousand days' work, and in transportation it is per million locomotive miles run. Mr. Kruttschnitt pointed out that the train miles standard, employed by many railroads, is not so accurate a gauge because, for one thing, there are more locomotives than trains and therefore, more opportunities for accidents.

Switch locomotives, for example, in yards add greatly to the aggregate mileage and cause a great many accidents. These would be ruled out altogether on a train mile basis. The following statement shows the number of train accidents and fatalities to passengers and employes resulting therefrom, on the Southern Pacific per million locomotive miles for a series of years.

Fatalities on the Southern Pacific in the Last Five Years



Of the fatalities among "Employes in Accidents to Trains" a large proportion were due to the negligence or carelessness of the victims.


A Comparison of Derailments and Their Causes

	Number.	Passengers. Killed.	Employes. Killed
1907	28.1	0.872	0.663
1908	24.4	0.037	0.370
1909	17.9	0.144	0.246
1910	8.4	0	0.347
1911	7.6	0	0.256
1912	8.1	0	0.745
1913	8.2	0	0.151
Nine months ending March, 1914	7.1	0	0.178

Mr. Kruttschnitt holds that the only way to prevent accidents and to locate the weak spots in the vast human machinery of a great railroad before they become dangerous, is through an incessant practice of watching and checking the service. Unless discipline is absolutely enforced, men grow careless and rules are not absolutely observed. While the Southern Pacific does not necessarily discharge a man who trips up, he nevertheless knows that his failure is noticed by someone and that his attention will be called to it. Officers are held to the strict performance of their duties, and they in turn, must do the same with the men under them. Superintendents both general and division, must be at least fifteen days of each month out of their offices going over their part of the road personally, and seeing that it is being run properly. Surprise tests are constantly being employed to know how accurately the men are observing the operating rules. The Southern Pacific for the last quarter, on its entire system, averaged ninety-nine and one-half per cent efficient in actual tests of the observances of signals.

Widening the Doors of Mail Cars.

THE growth of the parcel post service is compelling the railroads to assume an additional expense to the extent of widening the side doors of cars in which such shipments are handled. The widening of the doors of mail cars has become necessary in order to avoid delays to trains in loading large packages. Until the extension of the parcel post system the railroads loaded the mail matter through small doors, which provided ample space for the mail clerks to assort letters. The railroads contend that the expense incident to this change in the design of equipment will total a large sum, for the expenditure of which they will receive no additional revenue.

Patriotic Action Taken by Pennsylvania Railroad.

THE Board of Directors of the Pennsylvania Railroad Company has taken formal action providing for the retention in the service of any employe of the Company for such time as he may be engaged in State or National military or naval service in response to a call to arms in the event of war or other emergency. This applies whether such employe is a member of the National Guard or not.

The rule of the Company has been that a furlough from active service could not be granted for a period longer than nine months. At the time of the Spanish-American War, employes who left the service of the Company to engage in military or naval service sacrificed their positions, although following the war every effort was made to find places for the men who had left on that account.

Under the plan now adopted, employes shall be granted a furlough during the time they may be engaged in such military or naval service. Credit for the time absent will be given in computing pension allowances of employes so furloughed.

The Advisory Committee of the Voluntary Relief Department also took action so that a member may continue his membership in the Relief Fund. If he keeps up his contributions he will be entitled to the benefits of the Fund provided for any member who is on furlough.

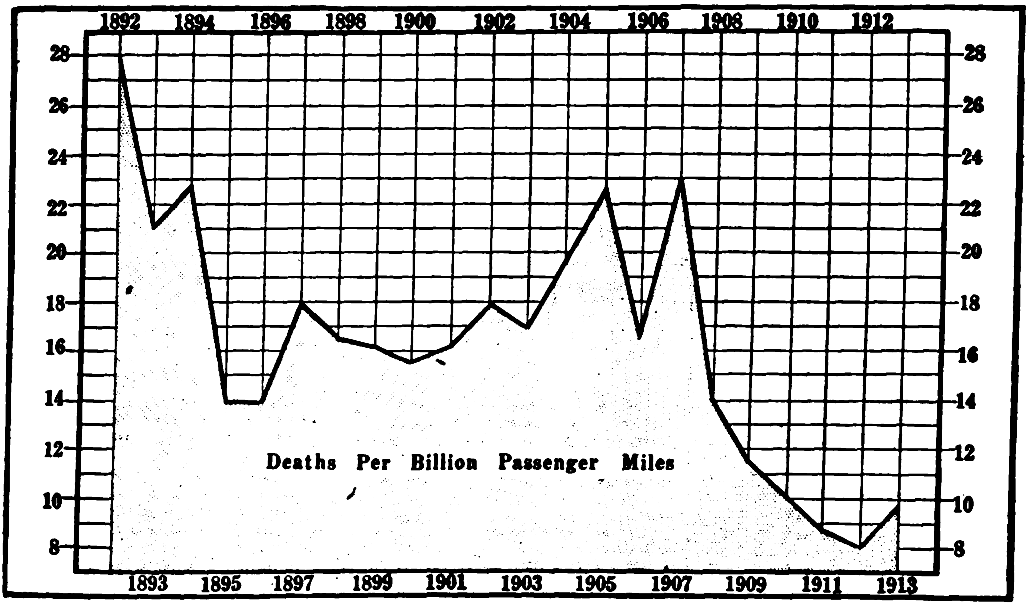
The action taken by the Board of Directors of the Pennsylvania Railroad Company applies not only to the contingency of war with Mexico, but is a general provision to preserve the interests of employes at any time, according to the language of the Board Resolution, that "they might engage in State or National Military or Naval service in response to a call to arms in the event of war or other emergency."

The Mortality of Railway Travel.

THE New York "Annalist" in its issue of May 18th, published the following interesting chart showing the deaths per billion passenger miles from 1892 until 1913 inclusive. This chart is prepared from figures published by the Bureau of Railway News and Statistics and attention is called to the fact that one of the interesting points developed is that four roads with a combined mileage of 1411 miles, have been operated for ten consecutive years without a single fatality to a passenger in a train accident, while 299 railways in the United States operating 120,901 miles of line, equal to the combined mileage of the railways of the United Kingdom, Germany, France, Austria and Italy, went through the fiscal year ended June 30, 1913, without a single fatality to a passenger in a train accident.

During the year the railways thus reporting complete immunity carried a total of 409,808,488 passengers an aggregate distance of 14,400,992,000 miles, and 968,764,956 tons of freight, a total of 141,790,227,000 ton miles. Almost one-

An Upturn in the Mortality of Railway Travel



half the entire railway traffic of the United States for the year thus was carried without one passenger being killed in an accident to a train.

This immunity record for the past fiscal year is the highest since the banner year 1909, and comes close to it, although traffic density, one of the largest factors affecting the probabilities of accidents was more than 11 per cent greater in the passenger business, and more than 30 per cent greater in the freight business of the railways.

Fluctuation in the number of passenger miles —which last year was the greatest on record— the number of passengers killed in railway accidents and the deaths per billion passenger miles are shown in the table below:

Year.	Passenger Miles.	Passengers Killed.	Per Billion Pas. Miles.
1892	13,362,898,299	376	28.00
1893	14,229,101,084	299	21.05
1894	14,289,445,893	324	22.66
1895	12,188,446,271	170	13.93
1896	13,049,007,233	181	13.92
1897	12,256,939,647	222	18.05
1898	13,379,930,004	221	16.50
1899	14,591,327,613	239	16.37
1900	16,038,076,200	249	15.50
1901	17,353,588,444	282	16.21
1902	19,689,937,620	345	18.02
1903	20,915,763,881	355	17.00
1904	21,923,213,536	441	20.13
1905	23,800,149,436	537	22.56
1906	25,167,240,831	418	16.65
1907	27,718,554,030	647	23.35
1908	29,082,836,944	406	13.95
1909	29,452,000,000	335	11.35
1910	32,338,496,329	324	10.03
1911	33,201,695,699	281	8.46
1912	33,510,673,000	270	8.06
1913	34,447,197,000	336	9.76

According to figures compiled by the same Bureau, there was also a marked increase in fatalities in Europe in the last year for which figures are available, as will be seen from the accompanying table:

Passengers Killed in European Railway Accidents.

1912	669	1907	586
1911	554	1906	560
1910	692	1905	503
1909	671	1904	412
1908	630		

The record of passenger mileage in Europe is not available, so that an exact yearly comparison with the figures shown in the accompanying chart cannot be made, but in 1910 those killed per billion passenger miles were 7.53, which compares with 8.06 in the United States in 1912. Obviously, there is no great disparity between the records of passenger fatalities in Europe and the United States.

Hersey B. Goodwin, who was a railroad commissioner for Massachusetts from 1896 to 1901, and first president of the Boston Chamber of Commerce, died on May 6th, in Cambridge, Mass., at the age of 78.

Abraham Vedder Hartwell, president of the F. G. Hartwell Coal Company, and formerly purchasing agent of the Chicago & Alton, died in Chicago on May 5th. He was born at Denmark, N. Y., and entered railway service in 1863 as fuel agent of the Chicago & Alton. During the following two years he was engaged in the construction of that road, and from 1865 to January 1, 1900, was purchasing agent of the same road, and then resigned to engage in the coal business.

Mechanical

New Locomotives for the Pennsylvania.

DURING the last few years the Pennsylvania Railroad Company has felt the need of a larger freight locomotive for use on the Main Line between Altoona and Pittsburgh, in order to reduce double-heading to a minimum and to avoid breaking up trains arriving at Altoona and Pittsburgh before sending them forward over the Pittsburgh Division. It was also thought desirable to experiment with a very heavy Pacific type locomotive for passenger service on this same division. With this object in view a Mikado locomotive, which will bear Pennsylvania Railroad classification "L-1-s," and a Pacific type locomotive, which will bear Pennsylvania Railroad classification "K-4-s," have been developed. The first "L-1-s" locomotive will be placed in service about the first of May of this year, while the first "K-4-s" locomotive will be placed in service about June 10th of this year.

Inasmuch as the road clearance is somewhat limited, also the weight per pair of driving wheels is limited to 65,000 pounds with a five per cent margin for scale variations and the dynamic augment of the unbalanced reciprocating parts at 70 M. P. H. is limited to thirty per cent of the weight of the drivers, it was necessary to keep the locomotive within restricted limits and make the revolving and reciprocating parts as light as possible and at the same time maintain the necessary strength. Further, it was found desirable to maintain as many parts as possible interchangeable in these two types of locomotives and to use as many parts as possible which are embodied in the design of the E-6-s locomotives.

The following are interesting features in the designs:

The design of boiler is particularly interesting in the type of flanging used. It will be noted that the throat sheet is flanged integral with the lower half of the rear barrel sheet. The advantages of this scheme are that it was possible to lower the locomotive about 1⅞ inches and at the same time give sufficient clearance for the rear driving wheels, the clearance being close at this point, particularly with the Pacific type locomotive. The practice of flanging the neck sheet and the barrel sheet in one piece has been followed on quite a number of our modern locomotives, also that of flanging the dome in one piece has been used to quite an extent. The boilers of the "L-1-s" and the "K-4-s" locomotives are interchangeable.

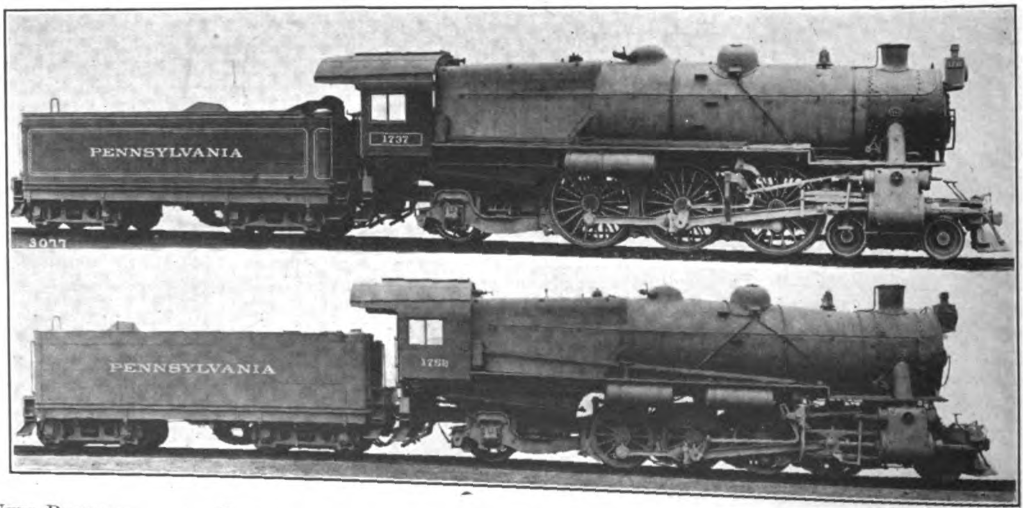
The locomotives are equipped with all-steel cabs, which are considerably smaller than the standard type of cab used on the Pennsylvania Railroad. On account of the fact that the locomotives are equipped with screw reverse gear a cab of great length is not necessary and it is believed that the shorter cab will give the engine crews better opportunity to observe signals.

The running gear has been lightened as much as possible by the use of heat-treated material for driving axles, crank pins, piston rods and side and main rods. The axles, crank pins, wrist pins and piston rods are provided with holes through them with a view of reducing the weight and at the same time providing a better chance for the heat-treatment to take effect.

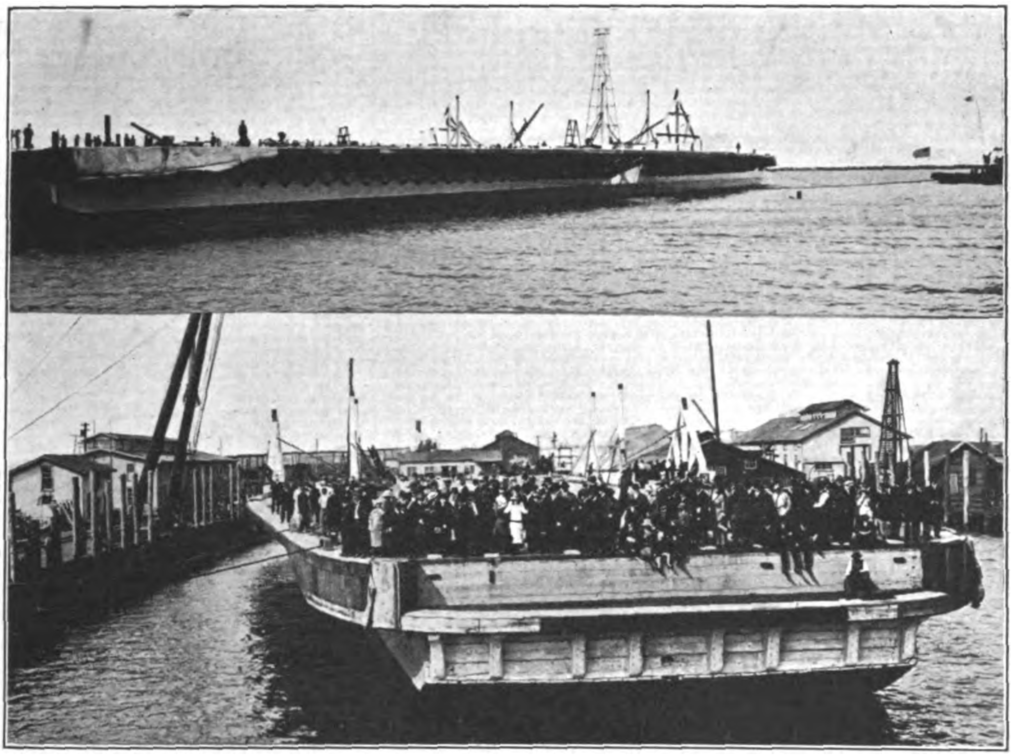
The trailer truck is what is known as the K-W truck, this truck being interchangeable on the E-6-s, L-1-s and K-4-s locomotives.

The driver brake arrangement is particularly interesting on account of the arrangement of cylinders, the arrangement being necessary to provide sufficient space for two 16-inch cylinders which are necessary for proper control.

The locomotives are equipped with Schmidt Smoke Tube superheaters and Security fire brick arch.



NEW PASSENGER AND FREIGHT LOCOMOTIVES FOR PENNSYLVANIA RAILROAD. THE UPPER PHOTOGRAPH REPRESENTS CLASS "K-4-S" PASSENGER LOCOMOTIVE, AND THE LOWER CLASS "L-1-S" FREIGHT LOCOMOTIVE.



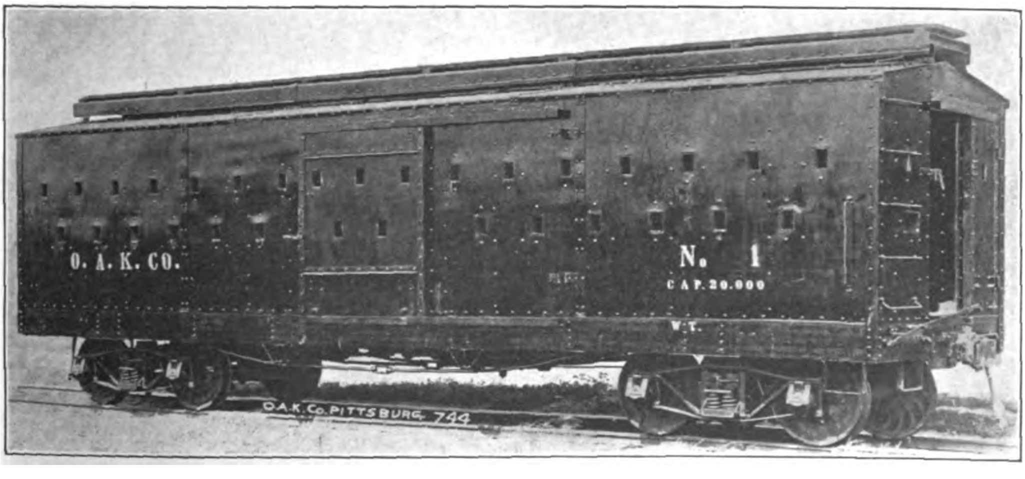
Two Views of the World's Largest Ferry Boat Recently Launched by the Southern Pacific Company at Oakland, Cal.

The World's Largest Ferry Boat.

THE Contra Costa, the largest ferry boat in the world, has been launched by the Southern Pacific Company at its ship yard in West Oakland, Cal. This vessel will ply between Port Costa and Benecia, to supplement the service now given by the Steamer Solano. The new boat is 433 feet long and will carry four tracks with a capacity of 36 freight cars and two engines, or 24 passenger cars and two engines. For safety, there are 14 bulkheads, any one of which might be punctured without sinking the vessel. The engines are located below the level of the main deck, thus giving ample track room above. Two sets of engines energize a paddle wheel on each side, so that if necessary the boat can be swing around in its own length by reversing one while the other is turning forward. Oil is used for fuel and electricity for lighting purposes.

Armored Cars for Mexican Federals.

THE following interesting photograph shows an armored car, being one of a number constructed for the Mexican Government

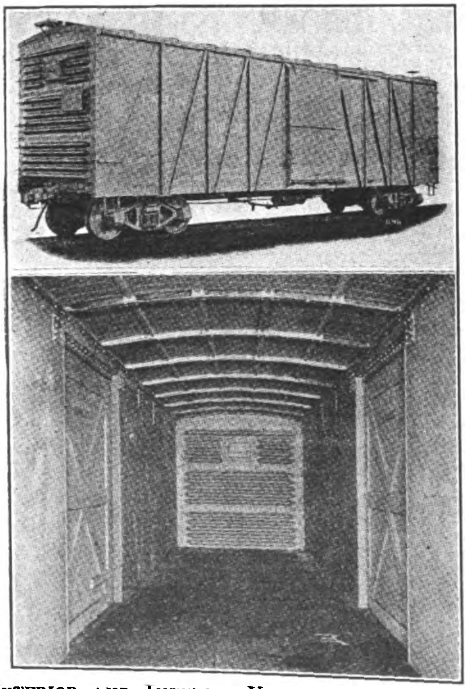


One of a Number of Armored Cars Built in the United States for the Mexican Government.

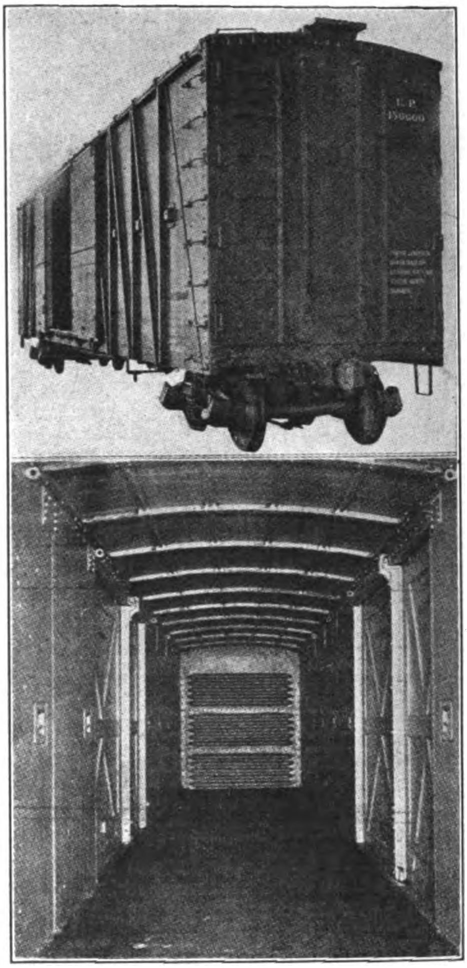
by the Orenstein-Arthur Koppel Company of Koppel, Penna. This car which is 35 feet long, nine feet wide and twelve feet five inches high, affords accommodations for a large number of men and is supposed to be bullet proof. The walls and roofs are made of two thicknesses of heavy steel plate with a four-inch space between filled with sand and concrete. As the picture indicates, there are numerous port holes, provided at the ends and sides, each flared at the outside so that the firing can be done in any direction. The floors are steel plates covered with wood and the underframes and trucks were constructed especially heavy. Accommodations for traveling are provided in the way of bunks, shelves, drinking water appliances, etc., making the car a moveable fort which can only be destroyed by artillery or heavy charges of dynamite. The doors of the car are comparatively small and supported on exceptional heavy rollers. When locked from the inside it is extremely difficult to force them open and a further means of exit and entrance has been provided by a ladder inside of the car which is suspended from the roof by pulleys and ropes. A large number of these cars have been built for the Mexican army, many of them having been captured or destroyed in recent encounters with the Constitutionalists.

Steel Box and Automobile Cars.

THE accompanying illustrations give an idea of the exterior and interior of steel box and automobile cars recently built by the Bettendorf Company for the Union Pacific Railroad. These cars are all steel with the exception of the floors, the longitudinal floor stringers, the side doors and the running boards. The advantages claimed for this type of construction are maximum strength and minimum weight, smoothness of interior, proof against grain leakage and general neatness of appearance. In their planning, side construction was utilized for the purpose of carrying load, thus permitting the use of lighter underframe construction than would otherwise have been necessary. In applying side sheathing no lap joints have been incorporated and no rivet heads are in evidence below the road line other than those by means of which the sheets are secured to the diagonal side frame members. This has been accomplished by flanging the side sheets and riveting them through these outward extending flanges to the webs of the Z-bar side posts. This method of attachment is also a permanent factor in making the cars proof against grain and weather leakage.



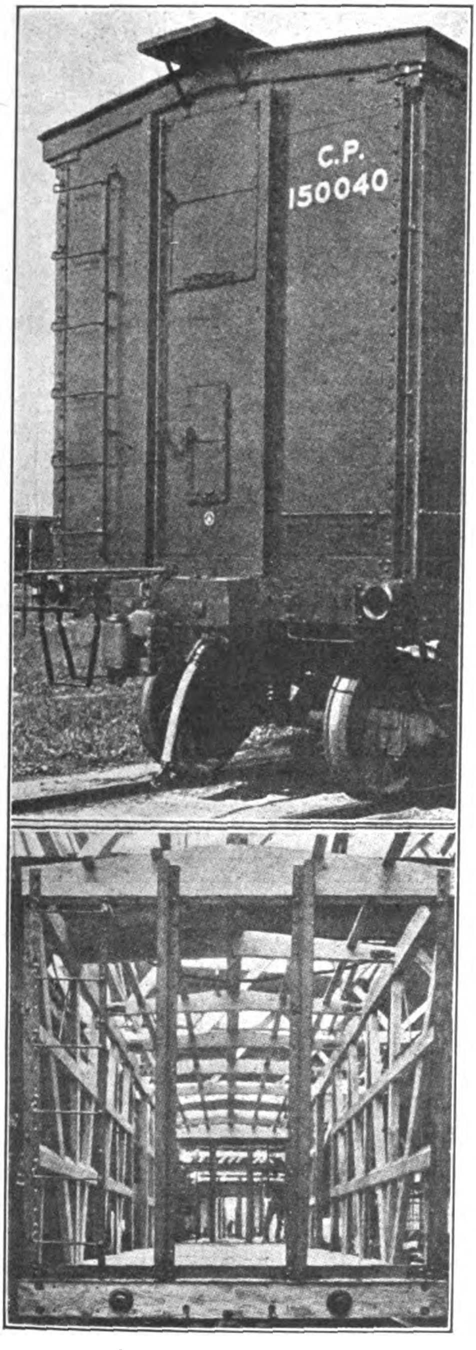
Exterior and Interior Views of Union Pacific's Steel Box Car.



Exterior and Interior Views of Union Pacific's Steel Automobile Car.

Reinforced Ends for Wooden Box Cars.

THE "Canadian Railway and Marine World" presents in its June issue the following illustrations of the wooden car end construction recently evolved on the Canadian Pa-

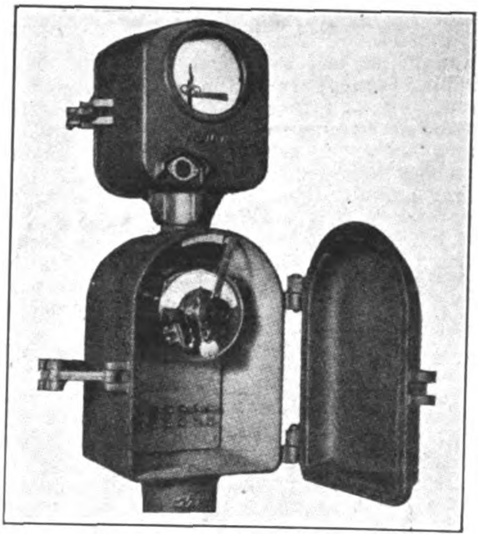


Reinforced End Wooden Box Car, Canadian Pacific Railway, Showing Details of End Framing.

cific Railroad. The corner posts consist of Z-bars with two intermediate Z-bars for end posts, these four being tied together with a Z-bar on the top and an angle on the bottom. The bottom angle is bolted to the end sill and riveted to the steel center sills. The top Z-bar is securely attached to the end plate. The end sheathing is horizontal and consists of 1¾-inch tongued and grooved lumber. This is secured to the verticle end Z-bars by bolts. It is stated that this makes a very solid end arrangement and one that is not easily damaged in the event of the lading and shifting in transit.

New Switch Indicator with Novel Features.

An improved switch indicator which, it is stated, will save power and can be used for outlying side tracks without circuit preliminaries, has been designed by the Union Switch and Signal Company. The accompanying illustration gives a general idea of its appearance. The saving of power is secured by the use of a push button which, when depressed, contacts close the circuit for the indicator provided the external circuit is complete. The indicator will not clear by the depression of the button unless energized by the external circuit. The indicator is provided with a time-release arrangement which is employed where it is undesirable to control the switch indicator by track circuit preliminaries.

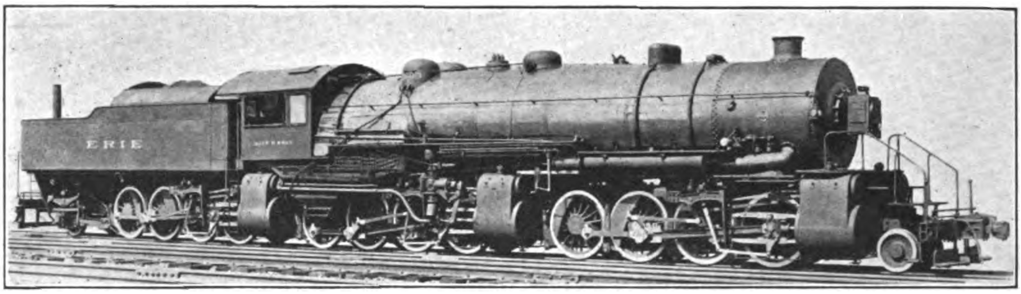


Switch Indicator with Time Release.

Articulated Compound Locomotive for the Erie Railroad.

The Baldwin Locomotive Works has recently completed, for the Erie Railroad, a locomotive for pusher service, which develops a tractive force of 160,000 pounds, and is by far the most powerful unit yet built. This capacity is secured, not by using excessive wheel-loads or a rigid wheel-base of unusual length, but by placing driving-wheels under the tender and thus making the weight of the latter available for adhesion. In heavy grade work especially, the weight of the tender detracts materially from the net hauling capacity of a locomotive of the usual type; while in this case, the tender is used as a means for increasing the hauling capacity.

This locomotive is built in accordance with patents granted to George R. Henderson, Consulting Engineer of the Baldwin Locomotive Works. The wheel arrangement is 2-8-8-8-2, the third group of driving wheels and the rear truck being placed under the tender section. The cylinder exhausts into the two front cylinders, as high pressure and four as low pressure. The



Erie Railroad's New Articulated Compound Locomotive with an Additional Set of Drivers Under Tender.

two high pressure cylinders drive the middle group of wheels. The right-hand high-pressure cylinde exhausts into the two front cylinders, and the left-hand high pressure cylinder exhausts into the two rear cylinders. This arrangement is therefore equivalent to a compound engine having a ratio of cylinder volumes of one to two.

The boiler has a conical connection in the middle of the barrel, and is fitted with the Gaines type of furnace. The firebox has a total length of 13 feet 6 inches, and of this the grates occupy 10 feet. A combustion chamber 54 inches long extends forward into the boiler barrel, and the tubes have a length of 24 feet. The brick arch is supported on six 3½-in. tubes and heated air is delivered under the arch by seven 3-in. pipes which are placed vertically in the bridge wall. There are two fire-doors, placed 32½ inches between centers and a Street mechanical stoker is applied.

The barrel of this boiler measures 94 inches in diameter at the front end and 102⅛ inches at the dome ring. The center line is placed 10 feet 7 inches above the rail. The circumferential seams are triple riveted, while the longitudinal seams have sextuple riveted butt joints, which are welded at the ends, and have an efficiency equal to ninety per cent of the solid plate. The dome is of pressed steel, 33 inches in diameter and 13 inches high. It contains a Chambers throttle, which is connected with the superheater header, in the usual manner, by an internal dry pipe. The superheater is composed of 53 elements, and is the largest ever applied to a locomotive; the superheating surface being 1584 square feet. The header is divided, separate castings being used for the saturated and superheated steam sections. The front end contains a single exhaust nozzle, with ring blower. The size of the nozzle can be varied by a simple adjusting device placed outside the smoke-box. The stack is 22 inches in diameter, and it has an internal section which extends down to the center line of the boiler.

The superheated steam is conveyed to the high-pressure cylinders through outside pipes, and the high pressure distribution is controlled by 16-inch piston valves, arranged for inside admission. Similar valves are applied to the low-pressure cylinders. These valves are all driven by Baker gear, and the three sets of motions are controlled simultaneously by the Ragonnet power reverse mechanism. All six cylinders are cast from the same pattern, and the valve motion and driving-gear details used with the three groups of wheels are as far as possible interchangeable. A large number of these details also interchange with those of the heavy Mikado type locomotives in service on this road.

Among the details of the driving-gear may be mentioned the pistons, all six of which are alike. The piston heads are steel forgings, of dished shape; and each is surrounded by a cast iron bull ring. The bull ring carries three packing rings, and is secured to the piston head by a retaining ring which is electrically welded into place. The cylinders and steam chests are bushed, and these bushings, as well as the piston and valve packing rings, are of Hunt-Spiller metal.

The pipes connecting the high and low pressure cylinders, are constructed like the flexible pipes in a Mallet locomotive. The high pressure cylinder saddle has cored in it two passages, one of which conveys the exhaust from the right-hand cylinder to the front receiver pipe, while the other conveys the exhaust from the left-hand cylinder to the back receiver pipe. The front cylinders exhaust up the stack in the usual manner, while the exhaust from the rear cylinders is discharged up a pipe placed at the back end of the tank. Between the rear cylinders and the exhaust pipe is placed a feed-water

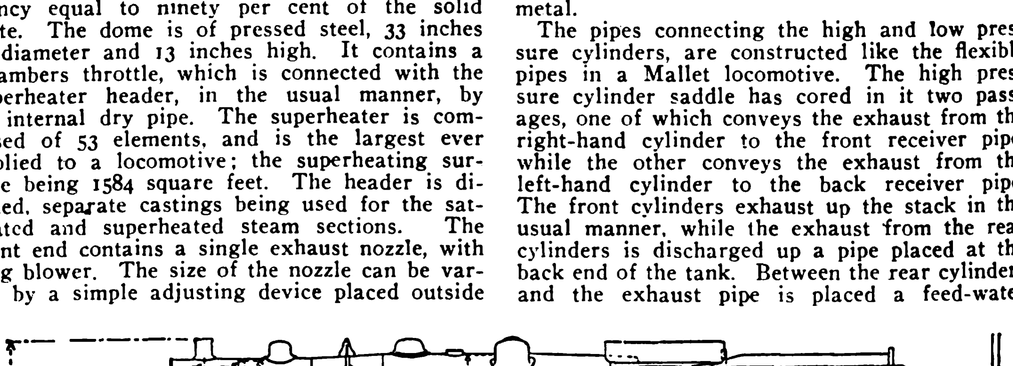


Diagram Illustrating Wheel Base and Weight Distribution.

heater, through which the exhaust steam passes. The heater consists of a large drum, traversed by small tubes. The drum has connection with the tank through a suitable valve, and the exhaust steam passes through the tubes. The hot feed from the drum is forced into the boiler by two pumps, which are driven from the crossheads of the high-pressure engine. Two injectors are also used, and they draw cold feedwater from the front end of the tank. The pump and injector checks are placed on the top center line of the boiler, near the front end.

The tender section, as far as frames, wheels, equalization and driving-gear are concerned, is arranged like a steam locomotive. The tank is supported on the frames by six bearers, which serve as transverse frame braces also. Three of these bearers are placed between adjacent pairs of driving-wheels; one is placed just back of the rear driving-wheels, one above the rear truck, and one under the back end of the tank. The width of the tank is 10 feet 8 inches; and it is placed sufficiently high to clear the valve motion.

The articulated connection between the middle and rear frames is placed under the cab, and between the rear cylinders. The radius bar on the middle frames makes a ball-jointed connectin with the hinge-pin. A similar connection is provided between the middle and front frames, and in this case the radius bar is pinned to the front frames in such a way as to allow vertical flexibility.

The frames are vanadium steel castings, 6 inches in width. Each is made in one piece with a single front section to which the cylinders and saddle are keyed and bolted. The front group of wheels is arranged with a continuous equalization system, the leading truck being center bearing and equalized with the driving-wheels as in a Consolidation engine. The second group of wheels has a continuous equalization system on each side of the locomotive. In the rear group, the equalization is broken between the second and third pairs of driving-wheels. The rear truck, which is of the side-bearing type with outside journals, is equalized with the two rear pairs of driving-wheels.

The arrangement of starting valve usually applied by the builders to Mallet locomotives, is used on this engine; except that in the present case, live steam is admitted to four low pressure cylinders instead of two. The admission of steam is controlled by a manually operated valve in the cab.

This locomotive marks an interesting step in the development of heavy power for freight service. The efficiency of a locomotive for slow, heavy work, is measured largely by the proportion of the total weight that is available for adhesion; and in this respect the present locomotive excels, as about ninety per cent of the total weight is carried on the driving-wheels, as against approximately 65 per cent in a Mallet locomotive of the 2-8-8-2 type, including, in the latter case, the weight of the separate tender.

As indicating the enormous tractive power of this locomotive, it is of interest to note that in a trial trip over the Baltimore and Ohio Railroad from Baltimore to Philadelphia, it drew a train of fifty-five coal cars containing 4,012 tons. This monster engine left Baltimore at 6.10 A. M. and arrived at Philadelphia at 4.30 in the afternoon, making the ninety-mile trip in ten hours and twenty minutes with what is believed to be the heaviest train ever hauled this distance by any one locomotive.

A Device for Bending Rails.

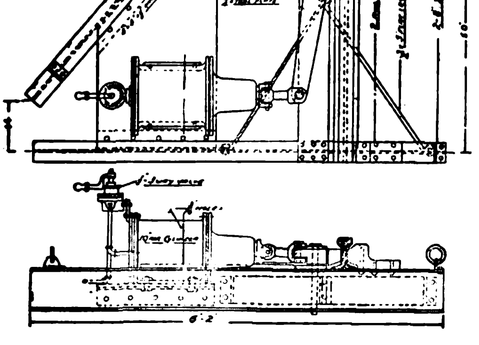
THE engineering department of the Panama Canal Commission, has developed a device for the quick and economical bending or breaking of old railway rails to be used at the Balboa Terminal for reinforcement in the concrete construction of the proposed dry dock No. 1.

The plan and end elevation of the apparatus are shown in the accompanying sketches. It consists of a base or table of trapezoidal shape, with a depth of five feet and with its greatest base six feet four inches long, on which is mounted the mechanism for bending or breaking the rail. The base is of ¾-inch steel plate, set on 8-inch I-beams and braced beneath by plates of steel, ¾-inch thick by five inches wide. Heavy studs, or rail stops, are set at each end of the base to hold the rail in place, while the pressure is applied.

The pressure is supplied by a 10-inch air cylinder, with a 10-inch stroke, mounted in one corner of the table. The piston of the cylinder is jointed to a heavy iron bar, two feet four inches long, the other end of which is set in a stationary pivot alongside the rail. Near this fulcrum is attached to the bar a wedge-shaped block of steel which fits between flanges of the rail. The forward stroke of the cylinder thrusts the wedge-shaped block against the web of the rail, midway between the rail stops on the sides of the table. It thus attains the maximum leverage for bending.

The strain thus set up is sufficient to bend the rail to a considerable curvature. In addition, when the rail is under the strain of pressure, it may be broken by a sharp blow from a sledge-hammer applied opposite the point of the wedge-shaped block.

The cylinder is supplied with compressed air, at the regular working pressure. Its operations are controlled by a ½-inch 3-way valve. In



Plan and Elevation of Rail Bending Device.

order to afford relief of pressure and avoid blowing the cylinder head off if the operator should neglect the proper manipulation of the controlling valve, a row of 3-16-inch holes has been drilled in the cylinder at a point about two-thirds of the distance of the forward stroke.

The outfit weighs about 650 pounds, and is portable. It may be used in railroad construction, for the bending of rails, by connecting the cylinder to the air brake system of a locomotive or train. The cut made when a rail is broken, however, is not clean enough to allow pieces to be joined up properly, in laying track, without finishing them off with a cold chisel.

The system has been very satisfactory in operation at Balboa. A gang using it can bend rails much faster than by any other simple field process, and can break rails a great deal more rapidly than by using the familiar "cold cut" method, of striking repeated sledge-hammer blows on a chisel or pointed hammer held against the side of the rail.

A substitute for the forge and anvil for the bending of steel rods to be used as reinforcement for concrete, also has been placed in use at Balboa, in connection with the construction of the quay wall and pier of the permanent terminals.

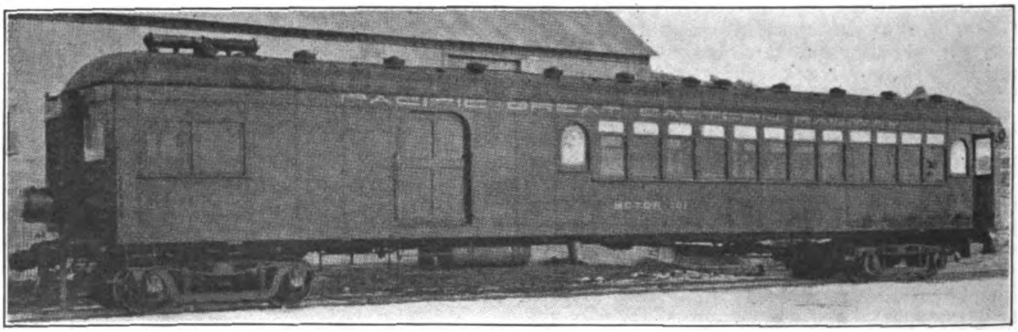
It is similar in principle and general form to the apparatus for bending rails. The rods are bent by the thrust of the piston rod of an engine cylinder, while they are held in place on a table in front of the cylinder. The table is a steel plate, bored with a number of holes in which movable steel pegs, or studs, are set according to the point and degree of bending desired.

Two such equipments are in use. One uses a single cylinder, 10 inches in diameter, which was recovered from an old French locomotive. This outfit places a single crimp in the ¾-inch rods, which are used in the length-wise beams of the construction, and the cylinder has sufficient power to bend three or four of the rods at the same time. The second equipment employs two 14-inch cylinders, taken from the dumping mechanism of a 1-cubic yard concrete mixer, which are mounted on opposite sides of the table. These make, at one placing on the table, opposite bends in the larger rods which are used in the main girder. They bend, without difficulty, rods as large as 1¼ inches in diameter. All the cylinders are operated by compressed air, under pressure of about eighty pounds to the square inch.

By the use of these equipments, five men are able to bend in an hour as many rods as they could bend in an 8-hour day by the former process of heating them in forges and bending over anvils. As the quay wall and pier require a total of approximately 4,000,000 pounds of bent rods in their reinforcement, the saving of time and money by the use of these equipments is considerable. The cold-bending process, instead of lessening the strength of the steel, is believed to conserve it.

Motor Cars for the Pacific Great Eastern.

THE Hall-Scott Motor Car Company, of San Francisco, has recently completed for the Pacific Great Eastern Railway, two 65-foot gas engine propelled motor cars. The power plant of each car is rated at 150 H. P. and the same Company is now engaged in building a third car for this road to be fitted with a 250 H. P. engine which will permit it to haul three 65-foot trailers, and yet maintain a reasonable schedule for local passenger service. The power is derived from a water cooled gas engine which is generally similar to that employed in an automobile. By means of a clutch, three



Motor Car for the Pacific Great Eastern Railway Built by the Hall-Scott Company.

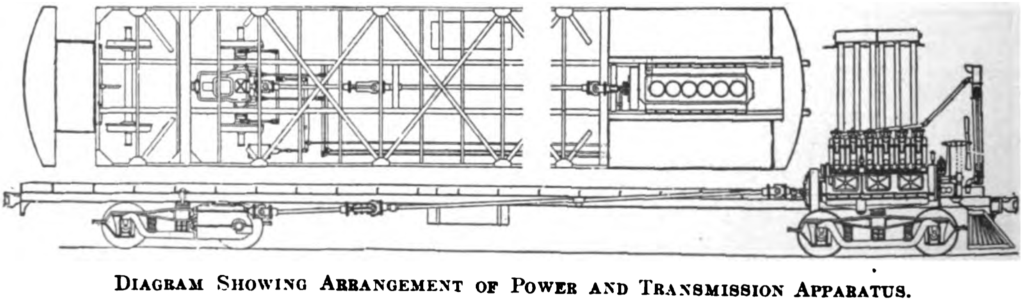


Diagram Showing Arrangement of Power and Transmission Apparatus.

section longitudinal driving shafts provided with flexible couplings and a selective gear set, mounted in a case on the forward axle of the rear truck, any one of four speeds either forward or reverse, may be obtained. The general appearance of the car and the arrangement of its power plant transmission, are indicated in the accompanying illustrations.

Electrical

Electrification of Steam Railroads.

THE members of the Richmond Railroad Club listened to an interesting address at its March meeting by Mr. H. Root Palmer, on "Electric Light and Power: Past, Present and Future." The part of Mr. Palmer's address which will appeal particularly to railway men, is that which he devoted to a discussion of the electrification of steam railroads. He said in part:

"There is no question that electrical apparatus has demonstrated its ability to handle large quantities of power reliably and economically, to meet successfully the increased traffic demand where steam locomotives fail in spite of their recent development, its superiority in handling double the trains in terminals with the same trackage as required for steam operations, no turning or shifting or necessity for frequent trips to round house for inspection and hostlering, ready to go without advance preparations and for tunnel work has no competitors. There is no doubt that in this day of railroad regulations and difficult railway finance, no argument will appeal to a railway manager that does not show beyond doubt, a saving in dollars and no small amount either.

"Central Station companies can be of material assistance by giving some attention to this phase of the situation and by co-operating with the railroads that reasonable regulation be effected, permitting the charging of rates adequate for the quality of service which must be rendered.

"The adoption of electrification by steam railroads would naturally follow as rapidly as manufacturers of heavy traction apparatus could take care of the business, and the railroads would come to the Central Station to purchase power just as they now go to the coal company to purchase coal, thereby opening wider the largest and most desirable field to the Central Station.

"Let us assume the role of a Prophet and dare to cast a horoscope of the future. Much is being said and done with regard to conservation of our forests and fuel supply with the view of postponing an impending crisis in industrialism. Scientists have told us much about the enormous quantity of energy stored up in radium. Suppose that the energy in one ton could be utilized in thirty years instead of being evolved at its variable slow rate of 1760 years for half disintegration. It would propel a ship of 15,000 horse power at the rate of fifteen knots per hour for thirty years, practically the life of the ship. To do this actually requires 1,500,000 tons of coal.

There is being woven a network of transmission lines which when completed will extend beyond the Pennsylvania Coal Fields toward the north and beyond the Alabama Coal Fields toward the south and to the westward beyond the West Virginia, Illinois and Kentucky Coal Fields to which will be connected the various hydro-electric developments. Large steam stations will be constructed at the mines in the various coal fields. This large and comprehensive system would probably receive consideration as an independent ownership, for wholesale purposes only, with broad powers having right of eminent domain and authority to condemn right-of-way in their capacity of public service companies. Electrification of steam railroads would follow, they buying their power, coal mining operators would buy their power, some railroads and mines having now found it to their advantage to do so. There would be no occasion for isolated plants, in fact there is none now from a standpoint of economics. Even when steam heating is required, the steam requirement for heating and steam required for power balance each other for only very short periods if at all. If high efficiency steam apparatus for power is installed, the exhaust is insufficient and live steam is used much of the time; if low efficiency steam apparatus for power is installed, the exhaust steam is in excess of the heating requirement and in both cases, considerable waste occurs. In this connection, however, it remains for some to convince the others to be convinced.

"There will be available from this transmission system for use on the farms, electric light and power, materially aiding the many movements both by private interests and the government in solving the civic problems which are now occupying their attention toward relieving the congested living conditions in the cities.

"These additional conveniences making country life more attractive and instead of the term "Electric City" we will be known as the "Electric Country."

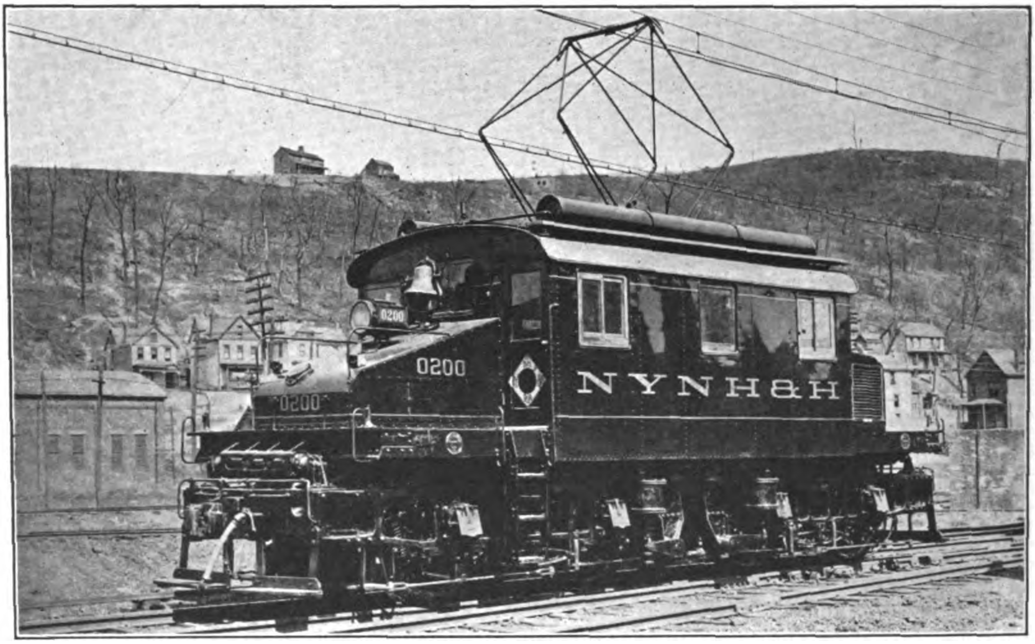
The Adaptability of the Electric Locomotive to Railroad Switching Service.

APPROXIMATELY eight million people are served by the New York, New Haven & Hartford Railroad in rendering service to the New England States. Of all freight hauled in and out of New England by rail, this road handles 75 per cent of it. The majority of this freight is carried via the Harlem River Division and the Harlem River and West Chester freight and transfer yards.

Although the complete electrification of the New Haven road between New York and New Haven has not yet been placed in electrical operation, the switching of all freight cars between Stamford and Harlem River has been done successfully by electricity for approximately eighteen months. The economics obtained by the use of the electric switcher locomotives have exceeded all the expectations of those who are responsible for their application to this field.

The reliability of this switcher locomotive equipment has proven to be far superior to the steam locomotive in switching service. The operation of these electric switcher locomotives is a source of satisfaction to the operating department and trainmen who have this work in charge.

SERVICE.—The three main switching yards on the New Haven System are: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Eighty-ton Baldwin-Westinghouse Switcher Locomotive Used by the New Haven System, Equipped with Four Westinghouse Single-Phase Railway Motors and Unit Switch Control.

Harlem River Yard, Length—23.3 miles.
Oak Point Yard, Length—37.16 miles.
Westchester Yard, Length—22.29 miles.

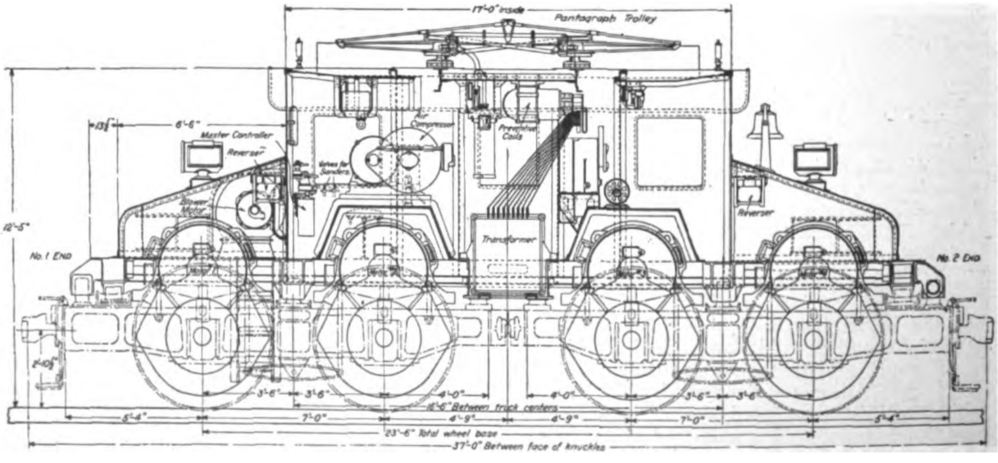
Also the Van Nest Yards which are used for storage only.

In March, 1911, the first switching engine was placed in operation at Stamford, Conn. In August, 1912, the first switcher started to work in the Westchester Yards; in September, 1912, the first in the Oak Point Yards in float service and in August, 1913, the first began its operation in the Harlem River Yards proper.

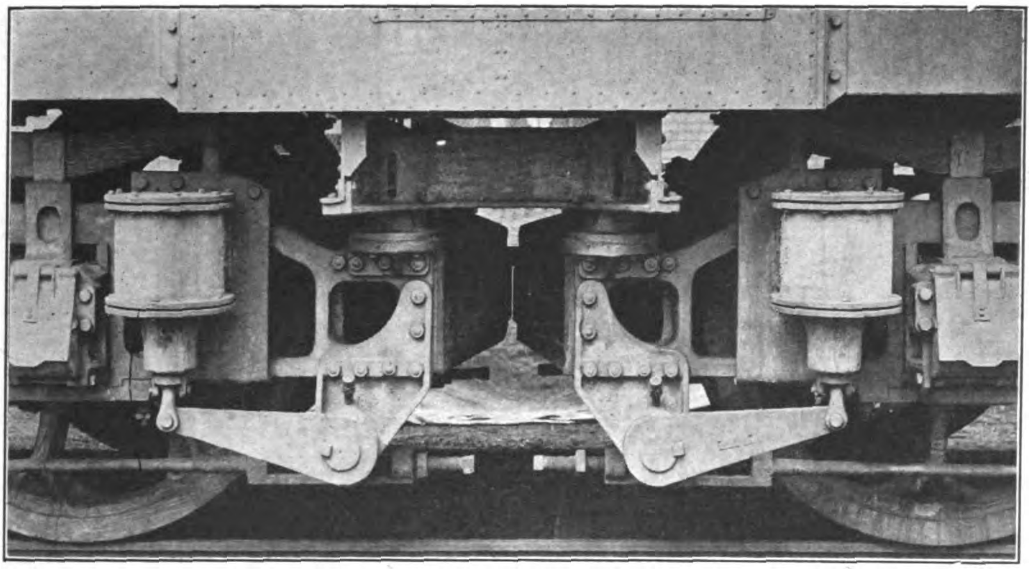
The service performed by these locomotives in the Oak Point Yard is of special interest. This yard is the terminal where all the cars on flats destined to the New England States are unloaded. Each float is properly docked and secured. There are two large controlling bridges at this terminal, one having accommodations for five floats, and the other for three. These bridges contain all of the counter weights used to compensate for the weight of the individual gang or approach bridges, besides all control apparatus necessary for the proper operation of these float docks.

The entire gang bridge to each float is hinged on to the main land. The bridge consists of two parts connected by a hinged joint. Each of these two parts of the approach bridge leading to a float, is raised and lowered electrically as the case may be by means of two controllers. In addition to these controllers, there are two controllers which manipulate two motors connected to a friction drum which by means of a rope holds the floats in their slips securely to the gang or approach bridge. Three large steel bars are used to keep the tracks on the float properly aligned with tracks on the approaches while cars are being loaded or unloaded.

The accompanying sketch shows a plan of


17'-0" inside
Pantograph Trolley
13½"
6'-6"
Master Controller
Reverser
Air Compressor
Valves for Sanders
Preventive Coils
Blower Motor
12'-5"
Transformer
Reverser
No. 1 End
No. 2 End
Motor
2'-10½"
3'-6"
3'-6"
4'-0"
4'-0"
3'-6"
3'-6"
16'-6" Between truck centers
5'-4"
7'-0"
4'-9"
4'-9"
7'-0"
5'-4"
23'-6" Total wheel base
37'-0" Between face of knuckles

Cross Section Elevation of New Haven Switcher Locomotive Showing Apparatus Installed.



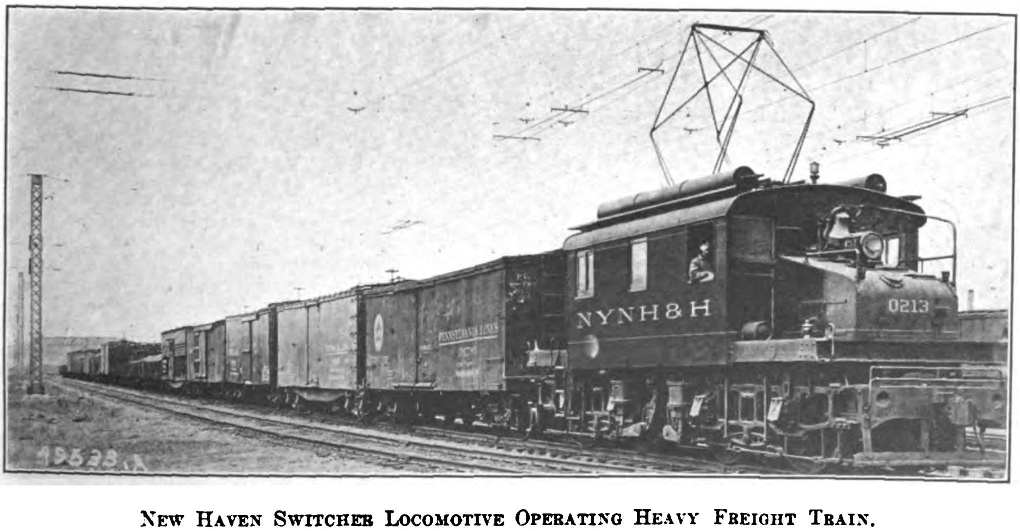
SHOWING CONNECTION BETWEEN TRUCKS OF THE NEW HAVEN SWITCHER LOCOMOTIVE.

tracks on each float. It requires six movements to unload a float and dispatch a train to the yard; also six movements are necessary to load a float. When either loading or unloading floats, there are always two flat cars coupled between the electric switched locomotive and the cars being hauled on or off the float. In this way the locomotive always remains on land and is never supported by the approach and the two flat cars act as an arm for reaching the train.

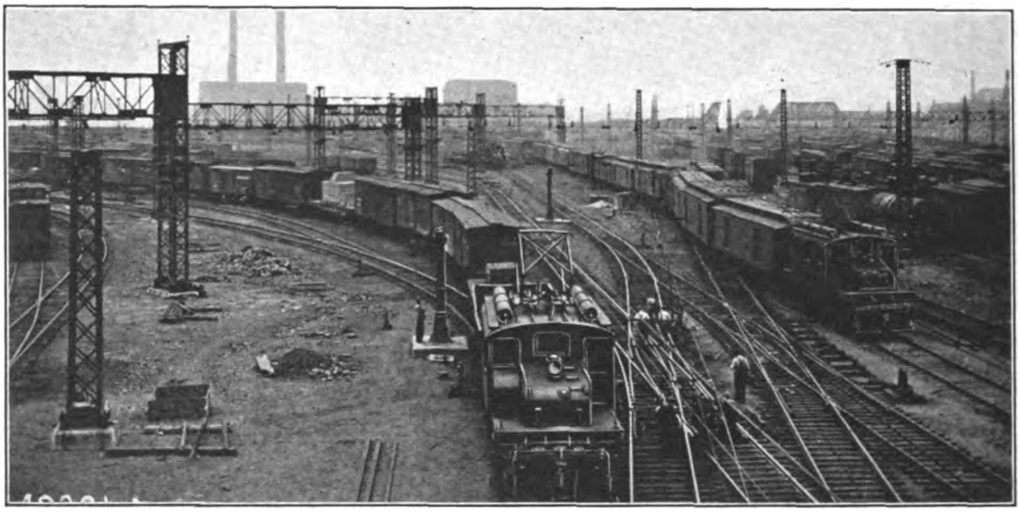
Each float has three tracks, two with a capacity for eight cars and a center one for six cars. In this float service it is important to load and unload cars so that the floats do not capsize. This is prevented as follows: Referring to the accompanying illustration, the eight cars on track No. 1, are hauled off until two cars remain, enough to have about 100 tons on this track, and this train left standing until later. Then all the eight cars on track No. 3 are hauled off. Next the six cars on track No. 3 and then off. Finally the eight-car train which was partially removed, is hauled off. The minimum time required to load and unload a float (12 movements) is thirty-five minutes.

To date not a single feature has developed in which the electric locomotive is not superior to steam locomotive in switching service. The ease with which electric locomotives are controlled, the elimination of stand-by losses and those that are necessary where coal and water are used, elimination of liability for freezing up in cold weather, are all features which are to be credited to the electric locomotive.

Six single-phase electric locomotives do the work of approximately twice the number of steam locomotives formerly used. A total of eight of these electric locomotives are sufficient for practically all of the switching work between Stamford and Harlem River stations. These are kept in service 24 hours a day, each making on the average of approximately 140 miles in 24



NEW HAVEN SWITCHER LOCOMOTIVE OPERATING HEAVY FREIGHT TRAIN.



OAK POINT YARD, NEW HAVEN SYSTEM, SHOWING ELECTRIC SWITCHER LOCOMOTIVES IN OPERATION.

hours with three eight-hour crew shifts. The electric locomotives handling the work between Westchester Yard and Harlem River for a given month made 38,000 locomotive miles and consumed approximately 896,000 kilowatt-hours of electrical energy at the locomotive.

During this same period, the six locomotives handled approximately 65,000 cars which had a total weight of approximately one million tons. Practically all of these cars were transferred from floats and since the control of the electric locomotive is more sensitive than the control of the steam locomotive, this is a feature that appeals strongly to the operators.

All of the heavy freight tonnage mentioned above is handled within the corporate limits of New York City, and the elimination of smoke by the use of the electric locomotive is another advantage which has appealed to all parties.

There are sixteen switching locomotives included in this installation. Each locomotive is equipped with four Westinghouse No. 410. 125 h. p. 25-cycle, single-phase motors and Unit Switch Control. These locomotives each weigh 80 tons and are able to exert a maximum tractive effort of 40,000 lbs. with a clean, dry rail. Several items given below such as hauling capacity, weights and mechanical data may be of interest.

*Rated Hauling Capacity.

Track Profile	Number of Cars Each Weighing 45 Tons With Load.	Max. Speed M. P. H.
Straight Level Track	67	8.5
½ Per Cent Grade	28	8.1
1 Per Cent Grade	17	8.1
2 Per Cent Grade	9	8.1

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*On the average road, the load that can be handled is determined by the maximum grade.

The figures given for "Straight Level Track" show the load which may be handled in infrequent switching service.

The switching locomotives are guaranteed to exert a maximum tractive effort of 36,000 lbs. for about three minutes at speeds up to 6 m.p.h. and a continuous tractive effort of 14,800 lbs. at a speed of 11½ m.p.h. In practice it has been found that an electric switching locomotive can do the work of two steam locomotives because it can be operated both day and night. In fact, the first switching locomotive furnished has been in use for about twenty hours a day in the yards at Stamford. It is not expected that the maximum voltage on the motors will be reached in ordinary switching service, but it is available when climbing grades or on longer runs in the yard. The average operating potential is estimated to be 190 volts. The hour rating corresponding to this voltage and current of 900 amps., is approximately 125 h. p. per motor.

Arrangements have been made for a large bridge, known as the interconnecting railroad bridge, between Harlem River and Long Island City, which will physically connect the Pennsylvania and New Haven Systems. Electricity as a motive power will be used entirely for handling all traffic over this bridge.

A detail description of these switcher locomotives follows:

Mechanical Features of Electric Switching Locomotives.

The sixteen switching locomotives are of the eight-wheeled 0-4-4-0 articulated truck type with central cab and sloping ends. The pulling and buffing strains are taken by the truck frames, which are joined at the center of the locomotive by a draw bar. The frames are placed outside the wheels, and are steel castings of the usual bar type, having straight pedestal and removable gibs. The semi-elliptic springs are placed directly over the journal boxes, and the springs of each truck are connected by equalizing beams. There is no cross equalization with this arrangement; that is, the equalizer system of one side of the locomotive is not connected with that of the other side.

The end bumpers are of cast steel, arranged for Westinghouse friction draft gear. At their inner ends, the frames are braced transversely by steel castings and these are provided with pockets which carry the intermediate drawbar. These castings also serve to transmit buffing shocks when the locomotive is coupling or pushing.

Each end of the armature shaft is equipped with a pinion which meshes with a steel tired gear. These gears are mounted rigidly in a quill which surrounds the axle with a clearance sufficient to allow vertical wheel play. The quill is carried in journals formed in the motor frame. The motor tractive effort is transmitted from the gears to the wheels through helical springs, rigidly attached at their ends to the wheel center and gear center respectively. With this arrangement, the motors are spring supported, and the center of gravity of the locomotive is at a suitable height above the rail.

As these locomotives operate on the New Haven tracks only, no provision has been made for collecting current from a third rail. The locomotives have been designed to traverse 20 degree curves.

The frame which carries the superstructure of the locomotive is built up of rolled shapes and plates with the exception of the cab bolsters which are cast steel. It is supported on each truck frame by spring-loaded friction plates at four points; two of these points are located at the inner end of the frame; one on either side, as far from the longitudinal centerline as possible. The two remaining points are located at the outer end of the frame, and placed close together on either side of the longitudial centerline. The trucks have center pins also, but these carry no weight and are simply to keep the superstructure frame in proper alignment with the trucks. One of the center pins is given sufficient longitudinal play to compensate for the backlash existing between pulling and buffing positions. The main driving wheels are 63 inches in diameter and have 56-inch cast steel spoke center. The tires are held with a shrink fit and shoulder.

The cab, which is of the steeple type, is built of steel plates with the main portion 17 feet 8 inches long. An operating equipment is placed at each end. Part of the apparatus is hung from the roof. Access can easily be had to transformer, compressor, and other control apparatus. The end motors, which are located under the sloping hoods, can be handled by a crane after removing the hoods. All the motors can be dropped into an overhauling pit.

This locomotive is fitted with Westinghouse EL double-end brake equipment with train connections; a hand brake on one track, sand boxes at each end with air sanders, and air operated bell and whistle. Steps are secured to each number. The cab can also be entered by means of a ladder on each side.

MOTORS AND BLOWERS.—The No. 410 railway motor is of the series type with short-circuited compensating winding and preventative resistance leads to the armature circuit. The motor is designed with eight poles. The main field winding consists of concentrated field coils, each of which has a few turns of heavy copper strap, and is in its general construction very similar to the field coils used in large D. C. railway motors. The auxiliary of compensating winding is distributed in the slots provided in the pole pieces. It consists of heavy copper bars, one in each slot, and straps interconnecting these bars at the ends.

The armature winding consists of heavy copper strap, and the resistance leads in the armature are made of strap of high resistance materials. It will be noted that windings are made of bars or straps and are, therefore, of a very strong and reliable structure, a feature which is exceedingly desirable for railway work. This is combined with the fact that the compensating winding are practically eliminated, and the fact that the voltage of the motor is very low, far below the customary voltages on D. C. railway motors, makes this motor as reliable a structure as can be imagined at the present state of art.

CONTROL.—The motors are connected in two pairs, so arranged that the two motors of each pair are permanently in series, while the two pairs are permanently in parallel. The speed regulation is obtained by connecting the motors to different taps on the secondary winding of the transformer in the same way as is done on all the previous New Haven locomotives.

The control is exceedingly simple because the switching locomotives are not required to operate on direct current. In addition to the a. c. circuit breaker for shutting off the high tension power from the transformer, the main circuit control apparatus consists merely of a single switch group having twelve unit switches together with three preventive coils and two reversers. As in all of the previous locomotives, the switches are of the Westinghouse standard pneumatically operated type, using the compressed air of the braking system as an operating force, and a small 20-volt storage battery for actuating the magnet valves. The battery is charged by means of a small motor-generator set which consists of a single-phase motor and d. c. generator. As a rule, this set furnishes all of the energy required for operating the controller circuits; the battery being merely allowed to float on the line ready for use in case of accident or other emergency.

These locomotives are controlled by means of a master controller located in each side of the cab. A sixteenth locomotive has been built in which a single controller in the center of the cab is provided for operation in either direction.

An ammeter is provided near each master controller to enable the engineer to know just what load each pair of motors is taking at any time, so that he can handle the locomotive to the best advantage. In the case of a switching locomotive it is especially desirable to know when it is capable of hauling extra heavy loads; in other words, to know the temperature condition of the motors. For this reason, there has been installed a temperature indicator which is built on the principle of the wheatstone bridge. The connection of this instrument is made through a coil in the motor fields. Its indications are obtained only when the motorman presses a button which is in the circuit of the control battery. This indicator has been in satisfactory operation since May, 1911.

A novel feature in the main circuit connections is that the motors are operated from a two coil transformer instead of an auto-transformer; thereby reducing the insulation strain on the windings to a minimum.

A number of interesting features regarding these locomotives are given below:

WEIGHTS.

	Lbs.
Per driver axle	39780
Mechanical parts	83390
Transformer	6000
Motor complete with gear and gear case case and quill drive	13585
Control equipment and details	10675
Forced ventilating equipment	770
Air-brake equipment	3950
Total weight	159120

MECHANICAL DATA.

Type of trucks	4 Wheels, articulated & swiveled
Truck wheel base, rigid	7 ft. 0 in.
Total wheel base	23 ft. 6 in.
Length between coupler knuckles	37 ft. 0 in.
Type of cab	steeple
Length of cab inside	17 ft. 0 in.
Length of hoods	6 ft. 6 in.
Width of hoods	5 ft. 0 in.
Width over all	10 ft. 3 in.
Diameter driving wheel	63 in.
Total height over cab roof	12 ft. 6 in.
Gauge	4 ft. 8½ in.

Electrical Progress in Japan.

According to a British Consular report, eight years have seen a very great development in the Japanese electrical industry. During that period the capital invested in supply undertakings and electric railways increased from $14,290,000 to $229,683,810. In the same period the length of transmission lines increased from 5,981 to 35,584 miles, and the length of electric railways from 93 to 704 miles. As copper is produced in Japan, the manufacture of electric wire has made good progress, and imports of this material are practically confined to a certain quantity of submarine and other cables. Only two or three years ago insulators and other porcelain ware required in connection with electrical work were imported from Germany, but the Japanese article is now said to be in no way inferior to the imported.

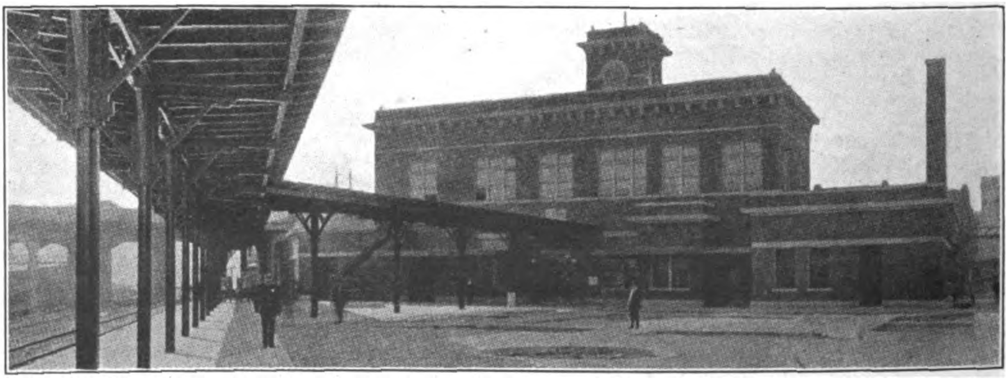
Terminal Improvements

New Passenger Station for the Missouri, Kansas and Texas, at Houston, Texas.

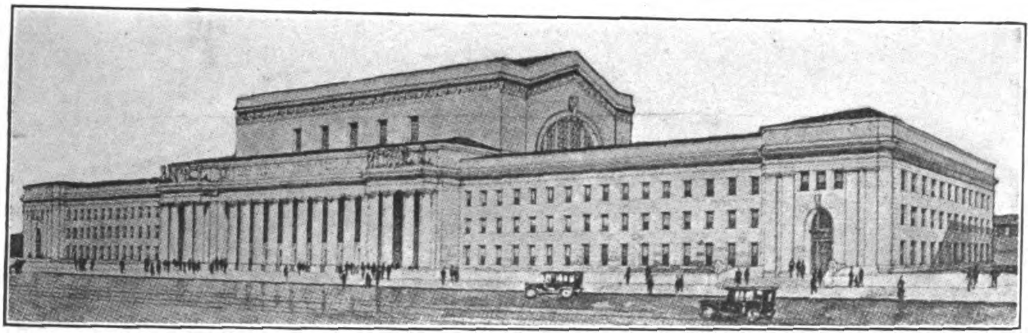
The new passenger station of the Missouri, Kansas and Texas Railway, which has recently been completed at Houston, Texas, presents a handsome and substantial appearance, as the accompanying illustration shows. The building, which is fireproof, is 186 feet long, divided into a central portion measuring 100x40 feet, a left wing 60x33 feet and an express room 53x40 feet. The exterior walls are of a reddish brown brick, while the interior partitions are of fireproof tile blocks. Reinforced concrete, supported by steel girders, was used in floor construction. There is a waiting room 75 feet long by 40 feet wide on the second floor, and a wide flight of stairs leading from this waiting room to the white waiting room below. In the extreme west end of the main building, below the ladies' rest room on the second floor, is a negro waiting room. Between the latter and the white waiting room are the ticket offices making them easily accessible from both sides. The station contains a news stand, checking counter, white and negro lunch rooms, kitchen, store rooms and refrigerator rooms, as well as baggage and express rooms.

Toronto's New Union Station.

The following illustrations are from the plans recently completed of the new Toronto Union Station on which work will shortly begin. The building is to be of the Roman type of architecture built of a light colored stone, and the floor plan of the station will be in the form of an inverted "T" the leg projecting under the tracks. The ticket lobby will be 250x84 feet, the Information Bureau being situated in the center thereof, equally convenient to all entrances. Twenty ticket booths will be located along the north wall of the ticket lobby and along the opposite wall will be the baggage room and the parcel room. Mid-way between these will be a forty foot passageway to the trains. The east end of the ticket lobby will connect with the lunch room and restaurant occupying a combined space of 152x76 feet. The opposite end of the ticket lobby will contain



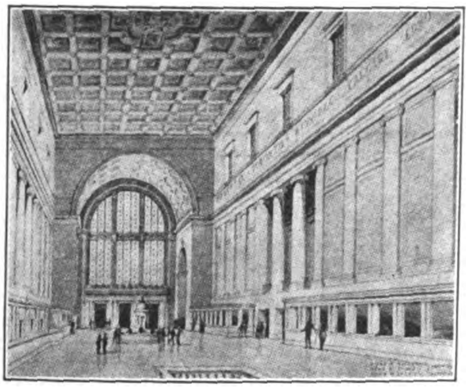
The Missouri, Kansas and Texas New Passenger Station at Houston.



THE NEW STATION TO BE ERECTED AT TORONTO, CANADA.

the main waiting room 88x64 feet and the women's rest room and toilet facilities occupying a total space of 68x34 feet.

The forty-foot passage way for trains will lead down a five and one-half per cent ramp to the train waiting room, the difference in elevation between the tracks and the train waiting room being 13.9 feet. The train waiting room, while not of great height will have an area of 100x230 feet in length from north to south, at right angles to the tracks. The baggage room will occupy the whole of the west end of the lower level extending out under the track area as well. Most of the opposite end will be for post office accommodations. Special accommodation has been provided in the design for the accommodation of immigrants. In the upper level plan, in each exit passage, there is to be a descending stairway leading to a cross passage in the lower level. This passage will connect with a series of rooms to the immediate east of the exit concourse, these rooms consisting of immigrants' waiting rooms, lavatories, lunch and kitchen service rooms, provincial and dominion agents, and laundry, this section of the station being entirely segregated from the balance of the station. There will be ten through tracks in the station in pairs, with a combination platform between each pair.



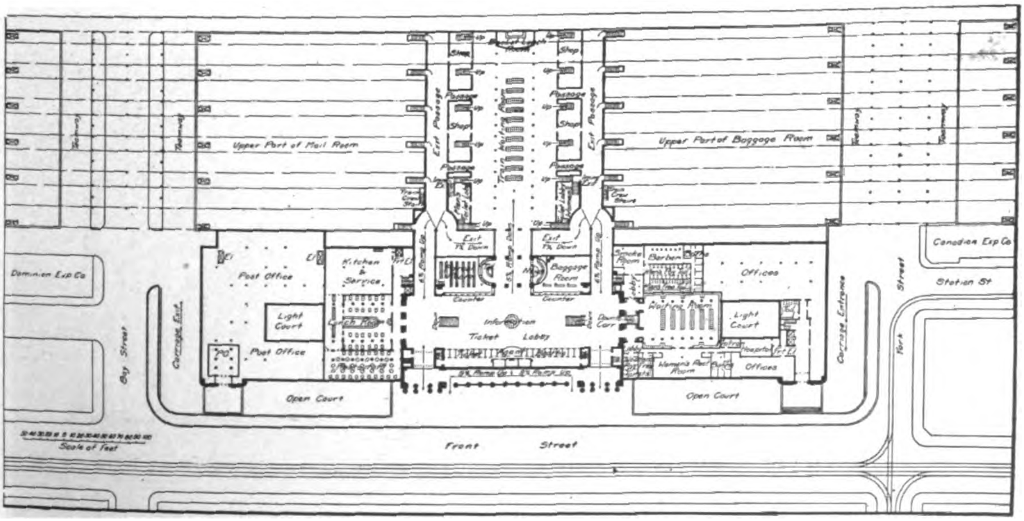
ARCHITECT'S DRAWING OF TICKET LOBBY, TORONTO, UNION STATION.

The new Union Station is to be built by the Toronto Terminal Railway Company, an organization of the Grand Trunk and Canadian Pacific interests formed to handle the project.

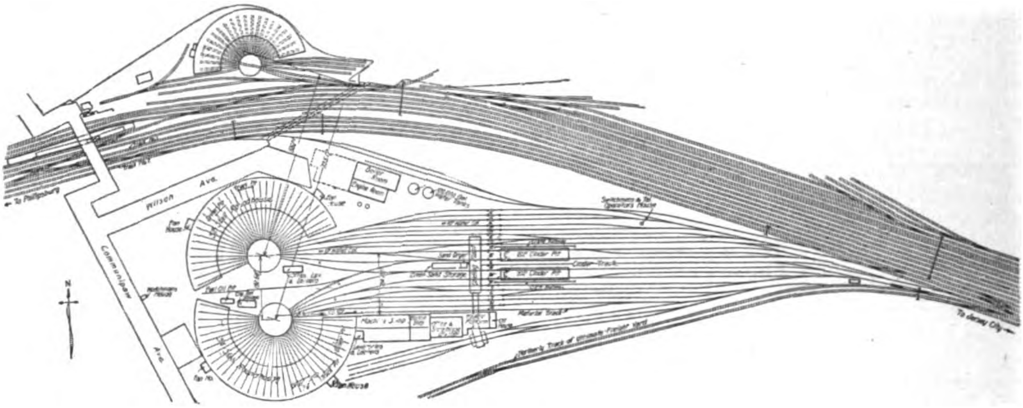
We are indebted to the "Canadian Railway and Marine World" for the information and illustrations presented herewith.

New Locomotive Terminal Facilities for the Central Railroad Company of New Jersey, at Communipaw, Jersey City, N. J.

BY reason of demand for increased facilities for rapidly and economically handling locomotives, the Central Railroad of New


Upper Part of Mail Room
Exit Passage
Passage
Shop
Train Waiting Room
Exit Passage
Passage
Shop
Upper Part of Baggage Room
Dominion Exp Co
Post Office
Kitchen & Service
Lunch Room
Light Court
Post Office
Bay Street
Carriage Exit
Exit
Information
Ticket Lobby
Baggage Room
Counter
Smoke Room
Barber
Offices
Waiting Room
Light Court
Women's Rest Room
Offices
Open Court
Open Court
Carriage Entrance
York Street
Canadian Exp Co
Station St
Front Street
Scale of Feet

MAIN FLOOR PLAN, TORONTO UNION STATION.



General Layout of Communipaw Locomotive Terminal, Central Station of New Jersey.

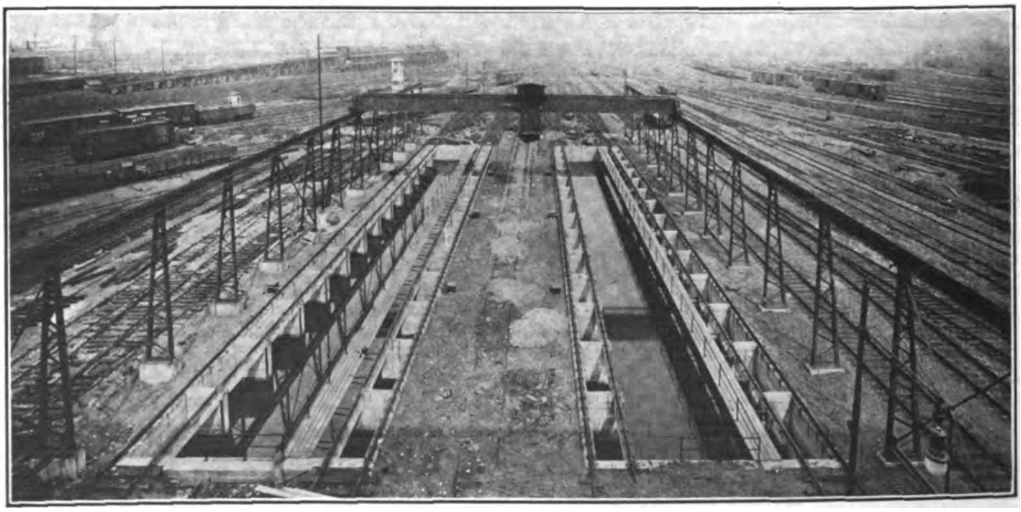
Jersey has had constructed for them at Communipaw, N. J., a modern locomotive terminal which for its size, convenience and up-to-date construction is not excelled by any other plant in the country. The work was designed and executed by Westinghouse Church Kerr & Company, engineers and constructors, New York City, in co-operation with and under the direction of Mr. Joseph O. Osgood, Chief Engineer, and Mr. A. E. Owen, Prin. Asst. Engineer, of the Central Railroad Co., of New Jersey.

The new plant is located on the south side of the main line tracks about one mile west of the passenger terminal and is in close proximity to the freight yards, which are located on the opposite side. Located with the freight yard on the one side and the passenger yard on the other, the terminal facilities are arbitrarily divided so that the freight and passenger engines are handled separately.

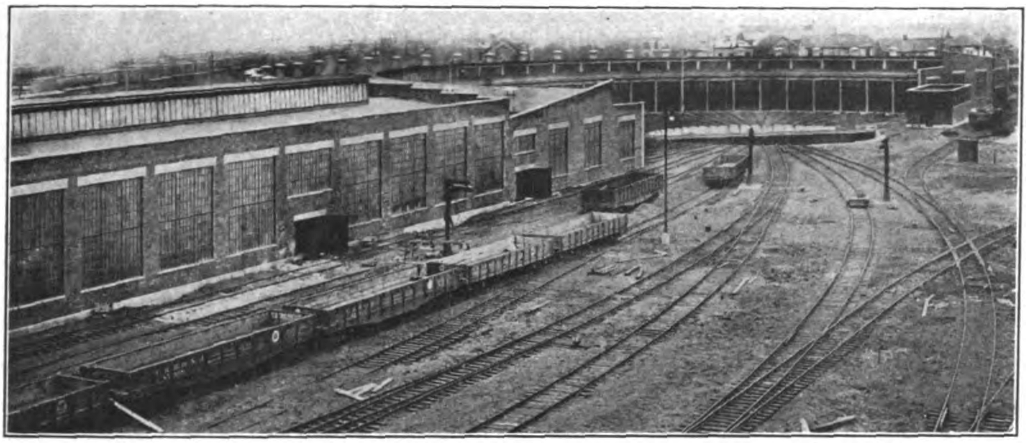
The sufficient track arrangement provides the necessary flexibility to permit of the free use of either of the houses for passenger or freight as may be found necessary or desirable. It has been possible to provide a layout of tracks, leading up and into the terminal, especially designed for the quick handling of passenger power, formerly cared for in the two old engine houses at Fiddlers and Communipaw, located on the north side of the main tracks, and through which were handled 30,823 locomotives during the first four months of the present year, or an average of 255 locomotives per day. During the summer months the number of engines handled per day is about 300 which includes all the usual performances of cleaning fires, dumping ashes, coaling, supplying sand and water, washing boilers, and inspecting, together with any light running repairs that may be necessary.

These completed improvements consist of a power house to serve not only the engine terminal but also to take care of all electrical requirements of the railroad from the Jersey City water front to Newark Bay. Two roundhouses, one 34-stall, 100 ft., and one 32-stall, 90 ft., two 100-ft. turn tables, machine shop, blacksmith shop, storehouses and office, material platform, oil house, cinder pits, coaling station, sand storage, roundhouse office and toilet building, engineers' locker building and telephone tower with all equipment and service inside of building and in yard.

The ground is principally cinder fill, varying in depth from two to ten feet, on an underlying



Cinder Pits, Looking East.



Machine Shops and Round House for Freight Engines.

strata of blue clay, sand, and bog, except where the old shore line runs across the west end of the property. In consequence all the buildings rest on piles with the exception of the west half of the round houses where the ground conditions are favorable for footings. The foundations of the buildings consist of concrete pile caps and piers where the concentrated loads are imposed, with reinforced concrete wall girders supporting the building walls. The power house, however, rests on a concrete slab four feet thick, extending under the entire building. This slab is supported on piles spaced equally under the entire mattress. All the buildings are constructed of reinforced concrete, steel, and brick with steel sash, wooden doors and concrete floor. The roofs of all buildings except the coaling station are covered with three-ply felt roofing.

Power House.

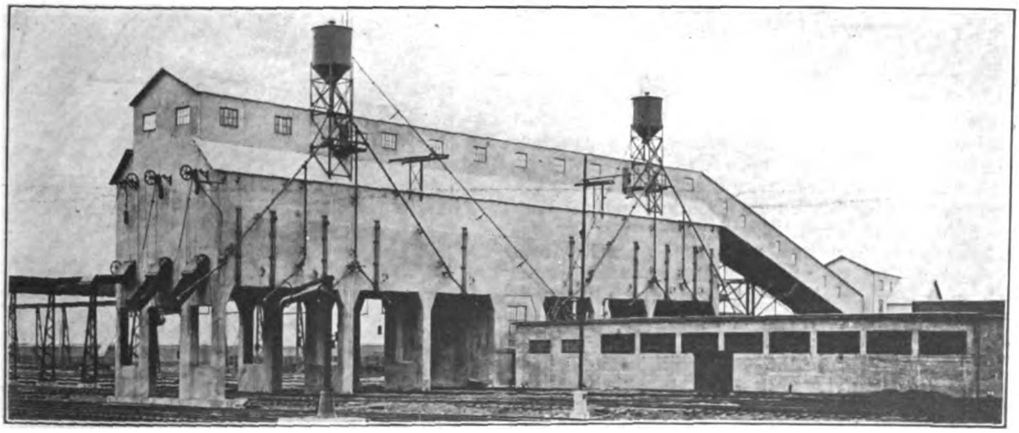
The power house is 135 feet long and 92 feet wide with concrete boiler and machine foundations. The building proper is of brick with a structural steel frame for supporting boilers, stack and coal bunkers; steel sash and doors.

Six 250 h. p. B. & W. water tube boilers arranged in three batteries of two each are installed and space is provided for an additional battery. Boilers are fed by two reciprocating, duplex, outside end packed, plunger type pumps, either of which is capable of furnishing the maximum amount of water needed for the boiler plant. Stokers are installed. A lined steel stack 10 ft. 6 in. in diameter and 75 ft. in height above the roof furnishes natural draft aided by automatically controlled turbine type blowers. Feed water and steam piping are of the loop type. A Cochrane feed water heater provides feed water at a temperature of about 200 degrees.

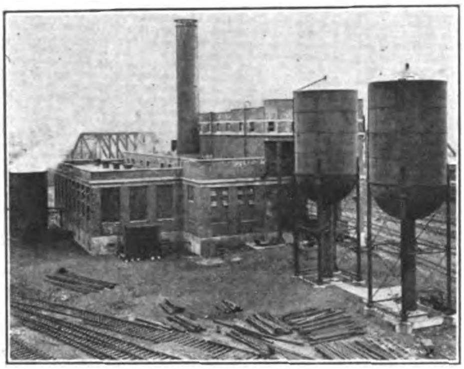
Hopper bottom cars deliver coal into a track hopper. The coal is then elevated by bucket elevator, discharging into a flight conveyor which distributes the coal into the bunkers, located over the boiler room. The coal is fed by gravity to the stokers through chutes with grates operated from the boiler room floor.

Ashes are dumped from the stoker into a hopper directly underneath. The hopper terminates in a gate. A bucket on a car traveling on an industrial track is manually pushed underneath the hopper, loaded by gravity with ashes and then manually shoved to a point below an electrically driven hoist which elevates the bucket and automatically dumps it into a hopper above the railroad siding. Ash and coal handling arrangement is such that the railroad car is used to bring in coal and load with ashes without changing its position.

Three 600 kw. 2200 volt a. c. General Electric



Coaling Station Looking from the West.



POWER HOUSE.

turbo generators are installed with space provided for a fourth unit. One steam driven exciter and one motor driven exciter are installed. Two 2500 cu. ft. compound steam two stage air compressors furnish air for the engine terminal, also for operation of switches and signals in terminal yard between Communipaw and Jersey City and to Elizabethport and Newark on the main line and on Newark branch.

The plant operates normally condensing. In cold weather the exhaust steam is used for heating the several buildings in the terminal. A mixing condenser is located in the engine room basement. As the water used for condensing purposes is taken from the Jersey City mains and metered, condensing water is used over again and cooled in a cooling tower. An automatically controlled motor driven centrifugal pump located in the basement of the plant is used for raising water into elevated tanks when necessary. There is also a 1500 gallon underwriter's pump connected onto high pessure fire lines in yard and buildings. Jacket circulating water is returned to the water system through a duplex steam pump.

The main switchboard is located on the engine room floor with high tension switches in the basement where the transformers are located. Current is generated at 2250 volts and stepped down to 550, 220 and 110 volts for use at the terminal proper.

A ten-ton Maris hand power crane spans the engine room floor.

ROUNDHOUSES.

The roundhouses are constructed of reinforced concrete columns, piers and roof girders with hollow tile and concrete roofs. The rear wall consists of concrete piers approximately five feet wide with steel sash between, with an 8-in. brick wall below these windows. This arrangement permits a maximum window space both for lighting and ventilation. The roof line is broken at the first row of columns at the front of the building so as to give a row of hinged sash over each stall. Additional ventilation is provided for by means of three-chamber four-inch hollow tile set in the rear wall above the windows and in the locomotive door lintels. There are also ventilating openings above the sash in the roundhouse monitors. This arrangement follows the C. R. R. of N. J. standard practice and provides an outlet for any gases that may collect under the ceiling which is a flat arch giving an unobstructed path for gases to pass out through the ventilator openings. Both houses are heated by indirect system. The fans and heaters are located in the fan houses of which there are two in each house. The hot air is delivered through underground ducts and is discharged through outlets located in the pits and around the rear walls. The floor wearing surfaces are concrete throughout and are reinforced along the sides of the pits to provide bearing for jacking. Each house is provided with steam, air and water service on columns.

In addition a boiler washing plant has been installed in connection with the 90-ft. house which serves 32 stalls. The piping is of such size as to permit of the system being extended to the 100-ft. house should it be desired at a later date.

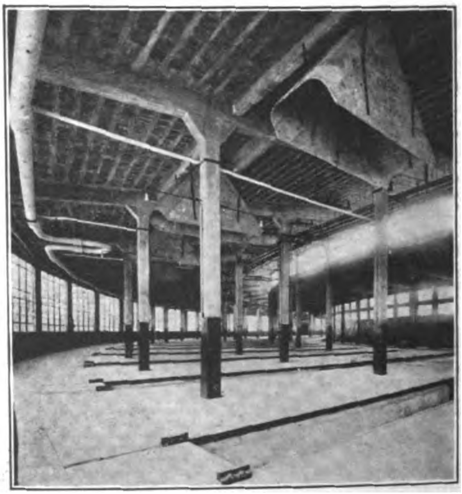
Asbestos smoke jacks are at present installed but the roofs of the houses are so designed and constructed that they could sustain the weight of cast iron jacks should it be found desirable to install them in place of the asbestos jacks.

Both houses are lighted by Tungsten lamps, wires carried in conduits under floors and in columns. There is installed in the 90-ft. round house one driver and truck drop pit and in the 100-ft. house two driver and one truck drip pit, each extending over three stalls which have pneumatic jacks for wheels and half-ton crane for handling driver boxes, etc.

The entrance doors to the stalls are hinged to pintle posts which are entirely separate from the building construction proper and so fastened to the building columns that the accidental wrecking of a door will not damage the building structure.

TURNTABLES.

Each roundhouse is served with 100-ft. deck turntable of heavy construction operated by electric tractors. Owing to the extreme depth of these turntable pits and the shallow grade of the sewer in the vicinity it was found necessary to provide against the contents of the sewer backing up into these pits. This was accomplished by constructing a deep sump into which



INTERIOR PASSENGER ENGINE ROUND HOUSE.

both pits are drained. Automatic ejectors discharge this drainage into the nearest sewer at a higher level.

Machine Shop and Blacksmith Shop.

Adjoining and directly connected to the 100-ft. roundhouse is a machine and blacksmith shop building. The total length is 200 feet and the total width 80 feet and the height is 28 feet over all.

A monitor 13 feet wide extends over the entire length of the building and is provided with continuous top hung steel sash operated from the machine shop floor. Toilet and locker room facilities are provided in a small extension located between the main building and the 100-ft. roundhouse. Access to this toilet room and locker room may be gained either from the machine shop or the roundhouse.

The machine shop space is 140 feet long by 80 feet wide and has a concrete floor throughout. The equipment consists of small lathes, crank planers, and other similar machines as may be required for light running repairs. Two motor driven line shafts near the north wall furnish power for the small machines. A motor driven wheel lathe for driving and truck wheel work is located near the center of the building and is served by 4-ton over head trolley. One of the roundhouse tracks is extended through the machine shop into the blacksmith shop. In the south east corner of the machine shop space is provided for pipe. Besides two pipe forges this space contains an 8 in. pipe machine, pipe racks, benches, etc.

The blacksmith and boiler shop is located at the east end of the building and is separated from the main or machine shop by a fireproof wall. This space is 40 feet wide and 80 feet long and the south half is occupied by the blacksmith shop which is equipped with five down draft forges, each served by a half-ton gib crane. A 2000-lb. steam hammer served by a 3-ton gib crane is located in the center of the blacksmith shop space. The equipment of the boiler shop consists of motor driven punch and shears, hand bending rolls, flange fire and screw flanger. Heating of the building is by direct radiation and lighting by Tungsten lamps varying from 25 to 500 watts. A concrete ramp is located at the northeast corner of the building. This leads to the material platform by means of which material may be brought directly to the machine and blacksmith shops from the storehouse.

Storehouse and Material Platform.

The storehouse is 100 feet long and 60 feet wide and directly adjoins the blacksmith shop building. Its construction is fireproof throughout. Steel bins and counters are used for storing material, so that except for any combustible contents the fire hazard is reduced to a minimum. The building is at present one story in height but the foundation walls and columns are designed heavy enough for a second story should it be found necessary to construct this addition at a later date. The easterly end of the building is divided by fireproof partitions into offices for the general foreman and the storekeeper and the toilet and wash room. The material platform is 48 feet wide and 80 feet long and extends 12 feet in width along the north side of the storehouse. This structure is built of reinforced concrete and hollow tile with concrete wearing surface.

Oil House.

For the storage of various kinds of oil used at the engine terminal, an oil house is located at the extreme east end of the material platform. This building is 20 feet wide and 48 feet long and one story in height and is provided with a basement 10 feet high in which the various oil storage tanks are located.

The measuring pumps and boxes for filling the storage tanks are located on the main floor where space is also allowed for storage of waste and grease cakes. The building is lighted by Tungsten lamps and heated by direct radiation at a high temperature to render the oil fluid in cold weather.

Coaling Station.

The most interesting structure of the group on account of its size and construction is the coaling station. The main building spans eight tracks and serves an additional track at each end. The structure is 168 feet long, 34 feet wide and 55 feet high and is of reinforced concrete throughout. The bunkers rest on special steel I-beams, girders encased in concrete and the hopper bottoms are built of reinforced concrete with hollow tile. The sides of the bunkers are heavily reinforced to withstand the side pressure of the coal when the bunkers are filled. A monitor extending the full length of the structure is of steel trusses with 2-in. plastered concrete sides and is provided with an asbestos roof. The coal is received from the cars by two receiving hoppers from which it is discharged by means of reciprocating feeders into bucket conveying elevators. These conveying elevators carry the coal to the top of the hopper house where it is discharged on two 30-inch belt conveyors running up the convey bridge over the top of the bunkers. Traveling trippers running on rails above the bunkers discharge the coal into various compartments.

There are three longitudinal bunkers having a capacity respectively of 430 tons of bituminous, 813 tons of broken and 430 tons of buckwheat coal. These bunkers are each divided into four compartments by transverse concrete partitions. Each track is served by three coal chutes so that an engine on any one of the ten tracks may be coaled with either bituminous, broken or buckwheat coal. The conveying machinery is divided into two separate and distinct units from the track hopper to the tripper over the bunker. Each unit having a conveying capacity of 100 tons per hour. Provisions are made, however, whereby either track hopper, elevator or conveyor of one unit may discharge its contents onto the elevator or conveyor of the other unit and in addition the trippers are so arranged as to discharge into either one of the three bunkers. This flexibility reduces the possibility of shutting down the entire plant due to a break down or other emergency to a minimum. The entire machinery is electrically driven.

Suitable stairways, platforms, and walkways are provided from which an inspection of the apparatus may be safely made while the machinery is in operation. Guards are placed over all exposed gears as a protection to the attendants and in addition there are eleven emergency stations from which the entire machinery may be shut down by pressing a button.

West of the coaling station and south of the machine shop and storehouse are the coal storage tracks having a capacity of 40 cars. Provisions are made for thawing out frozen coal in the cars on these tracks by means of live steam.

Under the center bay of the coaling station at the ground level there is a toilet and locker room for use of hostlers, cinder pit and coaling station employes.

SAND HOUSE.

Provisions for the storing and drying of sand are made in a building west of the coaling plant. This building is of reinforced concrete throughout and is 103 feet long, 16 feet wide and 14 feet high. The green sand is dried by means of two coal stoves of standard Central R. R. Co. of N. J. design located in a separate room in the east end of the building. The dried sand is then screened and elevated by means of compressed air to two storage tanks of 15 cu. yds. capacity each located on top of the coaling station. From these tanks the sand is delivered to the locomotive through cast-iron delivery pipes and wrought iron telescoping spouts serving each of the ten tracks.

CINDER PITS.

The cinder pits are located about 60 feet east of the coaling plant and are of the submerged type. They are each 200 feet long, 30 feet wide and 12 feet deep and are heavy reinforced concrete throughout. Each pit serves two tracks which are 26 feet center to center, the pits are parallel and are about 58 feet center to center, with a track for cinder cars between. The cinders are cleaned out of the pits by four-ton electric traveling crane operating a one and five-eighths yards clam shell bucket. This crane is located on a steel runway 240 feet long, 99 feet 6 inches span and 26 feet above the rail. Aside from the economy and speed in handling engines over the pit this arrangement permits of the coaling of engines from cars by means of the clam shell bucket should occasion arise.

Baltimore & Ohio's New Terminal at New York.

THE Baltimore and Ohio Railroad has recently placed in operation at New York, one of the most modern freight terminals of the present time. Occupying the block bounded by Twenty-fifth and Twenty-sixth Streets and by Eleventh and Thirteenth Avenues, the terminal building is 353 feet long and 68 feet wide and has eight stories for business purposes, with a mezzanine floor for offices, while there is an additional floor below the grade of the street. Included in the terminal are team tracks and paved drive-ways to facilitate the handling of business through the terminal, while within the building is provided with every modern device for moving shipments.

The structure is of the latest design in fireproof construction, there being no wood in the structure. Goods stored in the building are also completely protected by a sprinkler system.

Two tracks, having a capacity of eighteen cars, enter the building. The tracks are so constructed that the floors of the cars are approximately level with the first floor of the building—this floor being the unloading and trucking platform.

On the unloading floor are located automatic weighing scales, which are set to allow for the weight of the truck, and when a load is placed on the scale platform the hand on the dial indicates the weight. The hand remains fixed until the load is removed.

Six electric elevators, each with a capacity of 10,000 pounds, traveling 100 feet per minute, serve each floor, including the basement. These elevators are located on the street side, so that merchandise stored in the warehouse can be taken out without disturbing the freight handling on the first floor.

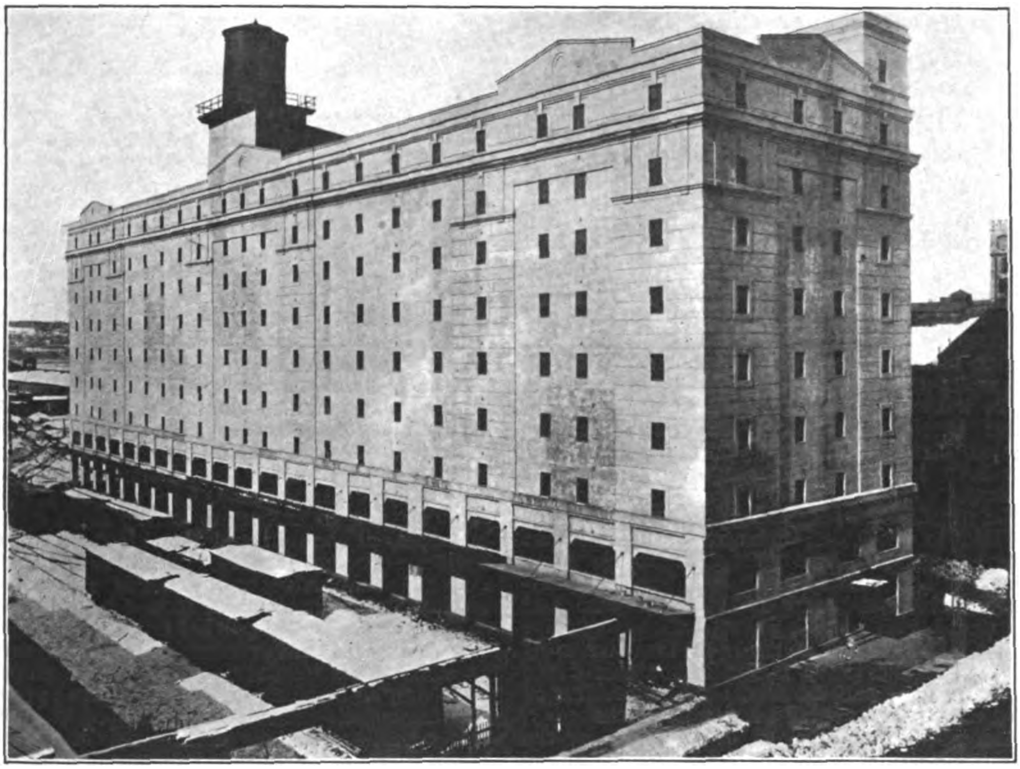
Large packages, especially automobiles, are handled in cars having end doors. To permit of such cars being unloaded directly into the warehouse, another track has been provided with its terminus just outside the end wall, where there is a door as large as the end of a car. Adjacent to this door is a large elevator, 12 feet wide by 17 feet long, to handle large packages or automobiles.

As the material stored varies considerably in weight, the floors were designed accordingly, the safe load varying from 500 pounds per square foot on the first floor to 150 pounds per square foot on the top floor. Above the first floor the building is divided into three sections by fire walls, making three separate compartments each served by two elevators and an enclosed stairway which will also serve as a fire escape.

The structural features are especially interesting—the building being of the "flat slab" type. It is the first building of this type approved by the building department of Manhattan. In this type the reinforcing rods radiate in all directions from the columns into the floor slabs, the loads being transmitted from the floor direct to the columns. Floor beams cut down the head-room, obstruct light and interfere with the sprinkler system; therefore, by eliminating there was a saving in the height of the building, better light was provided and the cost of installing sprinklers was lessened.

The curtain walls were carried up monolithic with the floors and the columns instead of being filled in after the column and floor skeleton was in place. This is somewhat unusual in concrete general practice. The building laws of Manhattan make it necessary to provide double reinforcing for the curtain walls. This is expensive and unnecessary as the curtain walls do not carry any of the floor loads.

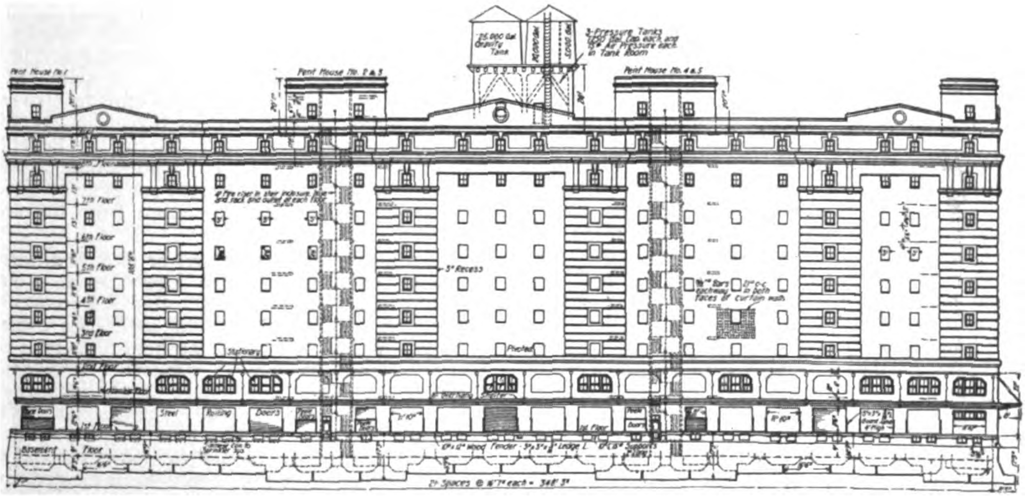
In the construction of the building 15,000 cubic yards of concrete and 675 tons of reinforcing steel were used. At present it covers only one sixth of the lot but is so arranged and constructed that additions can be made as the business warrants. The company anticipates covering the entire lot in the course of a few years. The greatest amount of trucking will be done on the first floor and this is finished with a rock mastic wearing surface. The offices on the mezzanine floor have wood wearing surface, while all storage floors have a granolithic finish. The house is equipped with electric lights and telephone service. All conduits for both sys-



New Eight Story Concrete Terminal Warehouse of Baltimore and Ohio Railroad in New York.

tems are concealed, having been placed in the floor slabs and columns during construction.

That part of the lot not used for the building is occupied by team tracks and driveways. The yard has a capacity of 75 cars. Every car can be reached by teams, each team driveway is paved with granite blocks. Spanning one driveway and a track is a traveling gantry crane, of twenty tons capacity, for loading or unloading heavy freight. A wagon scale of six tons capacity is convenient for teams. On the Twenty-fifth Street side is a platform used exclusively for unloading of poultry.


25,000 Gal. Gravity Tank
3-Pressure Tanks
in Tank Room
Pent House No. 1
Pent House No. 2 & 3
Pent House No. 4 & 5
7th Floor
6th Floor
5th Floor
4th Floor
3rd Floor
2nd Floor
1st Floor
Basement Floor
5" Recess
Stationary
Pivoted
Steel
Rolling
Doors
faces of curtain walls
21 Spaces @ 16'7" each = 348'3"

Side Elevation of Warehouse.

The building of the warehouse necessitated changing the entire track layout, as it was formerly switched from the east end and now it is switched from the west end. This is an exceptionally busy yard, which made it necessary to make most of the track changes at night always providing sufficient track to replace the done by the company's forces.

The new terminal and warehouse was designed old taken up. The track work was, of course, by M. A. Long, assistant to chief engineer under the direction of Francis Lee Stuart, chief engineer of the Baltimore and Ohio System. W. B. Redgrave engineer maintenance of way and M. P. Northam, assistant division engineer, had charge of the field work.

Southern Railway Improvements at Memphis.—Southern Railway Company has begun the construction of a modern classification yard and engine terminal on property located at Buntyn, six miles east of Memphis. The terminal is to be known as Forrest Yard in honor of the great Confederate cavalry chieftain, General Nathan Bedford Forrest. Contract for grading has been let to C. V. Lane and Company of Atlanta.

Fourteen and seven-tenths miles of track will be laid in the yard which will comprise two separate groups, each group consisting of a receiving and distribution yard. The group including the east-bound classification yard and the west-bound receiving yard will have twelve tracks, each with a capacity of from 60 to 65 cars, while the group including the east-bound receiving yard and the west-bound classification yard will have an equal number of tracks.

Among the facilities to be provided at the Forrest Yard will be an eighteen stall round house with a ninety-foot power turntable of latest type and heaviest capacity, strong enough to accommodate the heaviest class of power now in use, and a modern plant for furnishing coal, water and sand to locomotives.

A coal handling plant of reinforced concrete and of most modern type with machinery for mechanically and automatically weighing the coal issued to locomotives will be constructed. It will be electrically operated, and coal dumped from hopper-bottom cars will be conveyed to an overhead storage bin of 1,000 tons capacity from which it will be dropped to weighing pockets and issued direct to locomotives, the capacity given to each locomotive being weighed by subracting-beam type-registering scales. In connection with the coal handling plant there will be complete machinery for drying, handling, and issuing sand to locomotives. A water supply system to serve locomotives and the entire terminal will also be provided and it will be so arranged that it will be possible for a locomotive at one point to receive supplies of fuel, water, and sand simultaneously.

A machine shop and boiler room for running repairs to locomotives will also be constructed and a shed for the repair of freight cars will be built. A battery of air compressors will be provided which will afford pneumatic service throughout the terminal for testing brakes and the operation of air tools used in repair work. In connection with the round house, a wash room with lockers for employes will be provided and there will also be a fireproof oil storage house and a storehouse for the issue of supplies.

A commodious two-story building with tile roof will be erected as a yard office for the use of the yardmaster and his force of billing clerks, and the yard will also be provided with modern automatic track scales of the heaviest capacity.

The entire layout of buildings will have complete fire protection by an adequate system of mains and hydrants and the whole terminal with its buildings will be thoroughly lighted by electricity. Signaling and interlocking facilities for the protection of main line train movements as well as the handling of trains into and out of the yard will be installed at each end.

ORGANIZATION NOTES.

May Meeting of New York Railroad Club.—The members of the New York Railroad Club on May 15th, listened to an interesting address by William F. Zimmerman, vice-president of the Pittsburgh Testing Laboratory on "Bureau Inspection by Railroads." Mr. Zimmerman pointed out that for any one road to furnish a sufficient number of inspectors of the right calibre to inspect at the mill and shop all material and equipment being furnished them, would prove extremely expensive and that for this reason an insufficient number of men are often sent to do this work. He pointed out that to inspect any fair sized order, often requires as many as eight or ten men at one time. If, on account of having an insufficient number of men to properly inspect the material, it is shipped in imperfect condition and the defects only discovered when it reaches the shop, all work is delayed until the material is replaced and the inspector has to return to the mill to reinspect a small quantity of material. In the inspection of freight cars, Mr. Zimmerman claims that it takes from four to five men well acquainted with their business to be present at all times during the construction of such cars. The same is true with the construction of locomotives.

Mr. Zimmerman believes that the only practical way in which to meet this problem is for a number of railroads to combine their inspection departments either directly by forming a Bureau of Inspection in some central district with branches in all the large manufacturing districts, so that their orders can go direct to the district and someone in that district be held responsible, or else, do the same thing through some responsible organization at present qualified to do this work. To quote from his article:

"Instead, we will say, fifteen or twenty different railroads each having one inspector at a mill or shop, each man looking after his particular order and not being able to cover the ground properly, would it not be far better to have say six to eight inspectors properly distributed through the shop and have such inspections cover the entire work of all the railroads. With a proper foreman of the men at any railroad shop the inspection would be more thoroughly done, as each operation could be inspected, and for any given output would be more cheaply done. The reports of progress of each order could be promptly transmitted to the proper railroad and the foreman could post each engineer of tests of the various railroads weekly on the condition of their orders in the shop. This is the system on which the present commercial bureaus operate. It would be impossible for any outside organization to compete with individual inspection if it were not for the fact that such outside organizations are doing work for a large number of clients, and therefore can keep at all the principal mills and shops a sufficient force of men to properly and carefully inspect the commissions placed with them. It is a very difficult and a very expensive matter for any engineer of tests of any railroad not located near the manufacturer, to organize and send from his road a sufficient number of men thoroughly competent and versed in the art of inspection to inspect any good sized order, whether for material for permanent way, or for rolling stock equipment, and it would take such men some little time to get into the run of the mill or shop to properly inspect the work assigned to them. If, therefore, a number of railroads could combine to maintain what might be termed a railroad bureau of inspection where the engineer of tests of such road has a say as to the direction or management of such bureau, could not the work be more thoroughly done, more cheaply done and would not this be a solution of what now seems to the writer a very difficult problem? The writer believes that with such an organization, just as it is with the commercial bureaus doing this class of work to-day, the railroads would profit and a great load be taken off the mind of the engineer of tests."

The American Association of Railroad Superintendents.—The executive committee and advisory committee of the American Association of Railroad Superintendents, met in St. Louis on May 20th, with the following in attendance: Mr. D. S. Farley, superintendent, A. T. & S. F. Ry., Kansas City, Mo.; Mr. E. H. Shaughnessy, trainmaster, C. & N. W. Ry., Chicago, Ill.; Mr. W. L. Booth, superintendent, C. & O. Ry., of Indiana, Peru, Ind.; Mr. A. G. Smart, superintendent, C. B. & Q. R. R., Aurora, Ill.; Mr. W. S. Williams, superintendent, I. C. R. R., Carbondale, Ill.; Mr. A. E. Bougher, superintendent, M. K. & T. Ry., Sedalia, Mo.; Mr. S. E. Flanagan, superintendent, N. O. & N. E. R. R., New Orleans, La.; Mr. M. Marea, general superintendent, St. L. T. & E. R. R., St. Louis, Mo.; Mr. Chas. Burlingame, superintendent, The Wiggins Ferry Co., St. Louis, Mo.

Several important matters were discussed and handled. It was decided to hold the 1914 annual meeting in New York City, August 20th and 21st, and to hold the 1915 annual meeting at San Francisco, California, May 20th and 21st.

The membership of this Association has increased very rapidly during the past fifteen months and comprise membership of General Superintendents, Assistant General Superintendents, Superintendents, Assistant Superintendents, Trainmasters and Assistant Trainmasters throughout various parts of the United States, Mexico and Canada. There are a number of subjects to be brought before the meeting in New York next August, the details of which will be furnished later.

Forthcoming Annual Convention of the Traveling Engineers' Association.—The twenty-second annual convention of the Traveling Engineers' Association will be held in Chicago from September 15th to 18th, inclusive. The subjects to be discussed are as follows:

"Difficulties accompanying prevention of dense black smoke and its relation to cost of fuel and locomotive repairs," Martin Whalen, Chairman.

"Operation of all locomotives with a view of obtaining maximum efficiency at lowest cost;" J. R. Scott, Chairman.

"Advantage to be derived from the use of mechanical stokers, considering (first) increased efficiency of the locomotive; (second) to increase the possibility of securing a higher type of candidates for the position of firemen; (third) the utilization of cheaper grades of fuel;" J. H. DeSalis, Chairman.

"The care of locomotive brake equipment on line of road and at terminals; also, method of locating and reporting defects;" George H. Wood, Chairman.

"Advantage derived from the use of speed recorders and the influence of same on operating expense;" Fred Kerby, Chairman.

"Practical chemistry of combustion;" A. G. Kinyon.

"Scientific train loading; Tonnage rating. The best method to obtain maximum tonnage haul for the engine over the entire division, taking into consideration the grades at different points on the Division;" O. S. Beyer, Jr.

Annual Elections of the Traffic Club of Pittsburgh.—The Traffic Club of Pittsburgh, at their annual election, Monday, June 8th, held at the Hotel Schenley, elected the following: President, Edward F. Lalk, General Agent, Santa Fe System; First Vice-President, Wm. H. Higgins, Traffic Manager, Wheeling Steel & Iron Co.; Second Vice-President, Milton H. Jacobs, A. G. F. A., Western Maryland Railroad. Board of Governors: Transportation—George H. Kerr, General Agent, Southern Railway; John E. Corfield, General Agent, Union Pacific System and Ralph B. Merrick, General Agent, Frisco System. Industrial—Glen A. Aiken, Traffic Manager, Spang, Chalfant & Co., Inc.; Alfred R. Kennedy, Traffic Manager, Pittsburgh Steel Co. The secretarial and treasury offices were chosen without opposition: D. L. Wells, General Agent, Erie Railroad and James T. Neison, Commercial Agent, Missouri Pacific Railway, were reelected Secretary and Treasurer respectively. Frank D. Hurst, General Agent, L. S. & M. S. Railway, tied with Mr. Merrick for the third Transportation Governor. Mr. Merrick won by lot.

A most pleasing incident was the presentation of a costly watch to the retiring president, E. C. Sattley, by Chairman John M. Gross of the Board of Governors. Acting for the entire membership, in a few well chosen words, Mr. Gross expressed the great appreciation of the earnest efforts of President Sattley, whose administration has been one of the most successful of the Club's career. Mr. Sattley expressed his thanks both for the token and for the hearty co-operation of the various committees during the past year. The new Board of Governors will organize shortly and the newly elected officers will be inducted into office at the August meeting which will take the form of an outing.

The Portland Transportation Club.— The Transportation Club of Portland, though of comparatively recent origin, has already taken its place in the front ranks of similar organizations in that enterprising Pacific Coast city. It is non-sectarian and non-political and its object, in a broad sense, is to promote social and business interests and the good fellowship and culture of its members. The present officers are: W. A. Robbins, president; W. O. Roberts, secretary; W. Merriman, vice-president and E. W. Mosher, treasurer.

The spacious quarters of the Transportation Club are located on the mezzanine floor of the Multnomah Hotel, the largest hotel on the Pacific Coast. The rooms comprise the main parlors, billiard and pool rooms, card and domino rooms and secretary's office. The huge ball room of the hotel is also connected with the Club rooms when needed for dances or smokers. Bi-weekly meetings are held at which addresses are delivered by prominent officials and others, the average attendance being from 200 to 300 men. The club also publishes a monthly paper entitled "The Headlight," which is edited by C. D. Freeman, publicity agent of the North Bank Road. The paper is breezy and contains, in addition to the regular Club announcements, personals, railroad notes of interest, etc.

The Club points with no small pride and satisfaction to the extraordinary circumstance that its comfortably equipped and attractive club rooms do not include a bar or grill, and that members may enjoy their inviting privileges without spending one cent. Billiard, pool and card tables, and all other accessories, are absolutely free to members.

May Meeting of Central Railway Club.—The members of the Central Railway Club listened to an interesting address on May 8th, by W. F. Goltra, president of the W. F. Goltra Tie Company, of Cleveland, on: "Treating Ties and Timbers as Practiced in America." Mr. Goltra briefly reviewed the growth of the timber treating industry in the United States, which he stated had its inception in 1856, when the Vermont Central Railroad erected a plant to treat ties with chloride of zinc. Prior to 1885, the development was a slow one, as up to that year there were only three pressure plants in existence. In 1890, there were eight plants, in 1895, twelve plants, in 1900, fifteen plants, in 1905, thirty-five plants, in 1910, seventy-four plants and at the close of the year 1913, ninety-two plants with two under construction. These ninety-four plants have an aggregate capacity of 109,441,000 ties per annum. The actual number of ties treated in 1913, was 36,250,000 or about 25 per cent of the entire number purchased by the steam and electric railways. Sixty-four of the plants are owned and operated by independent companies, while thirty are owned and operated by railway companies, who employ the plants exclusively for their own requirements.

Mr. Goltra points out that there are two general methods of impregnating woods with antiseptics, namely: Impregnation by immersion in open tanks or boilers without pressure, also impregnation by pneumatic pressure by means of force pumps and air-tight cylinders. He then reviews at some length the various processes employed under the pressure system. Almost every class of forest timber growing in practically every section of the United States is employed and the various classes of material treated include railroad ties, piling, telegraph poles, dimension timbers, switch ties, cross arms, mine props, fence posts, paving blocks, wooden pipe crossing, plank signal poles and tie plugs.

Speaking of the kinds of preservatives used, Mr. Goltra had the following to say:

"Creosote oil and chloride of zinc, or combinations of these antiseptics are the principal preservatives used. Crude oil, corrosive sublimate, aluminum sulphate and carbolineum are other preservatives which have been used in smaller quantities. During the year 1913, 100,000,000 gallons of creosote oil and 25,000,000 pounds of zinc chloride salts were used in treatment of wood by the treating plants in the United States. Foreign creosote is imported, chiefly from England and Germany, and constitutes about 70 per cent of the consumption of this commodity in the United States. The bulk of the zinc chloride is produced by large manufacturers of this chemical in the United States and very little is imported.

"Many problems in the art of treating wood with antiseptics have yet to be solved, and there is undoubtedly much room for improvement. Many years of experience, exhaustive study and close observation of the methods employed in timber treating, both in this and foreign countries, persuades the speaker to say that the greatest improvements in the present methods employed lies in the direction of a speedier and more efficient method of seasoning ties and timbers, a more thorough preparation of the same for receiving the injection of the antiseptic and a greater economy in the handling of the material in process of treatment, by means of modern equipment and appliances.

"A majority of the timber treating plants in this country are treating ties and timbers by the same method and in the same manner as was practiced nearly half a century ago. This consists of simply placing the timber to be treated in air tight cylinders, frequently in unfit condition for treatment, and submerging the wood in a preservative fluid and then forcing more liquid into the wood by means of force pumps. Some modifications of this primitive method have been tried and recommended and some improvement has been accomplished, but it has been slow, because in a majority of cases the experimenters and practitioners confined themselves closely to the methods invented by Sir William Burnett and Mr. John Bethell, of England, in 1838, and any departure from these two established methods is made with diffidence.

"The industry of wood preserving is certain to expand as soon as the more or less experimental period is passed. In using the word "experimental" it is not meant that there is any doubt as to financial results, but there is doubt as to what woods ought to be treated; as to what preservative treatment should be given; the effect of climatic and other conditions; cost of different preservatives delivered at the plant; manner of seasoning and preparing for treatment; supply and price of timber; amount and weight of traffic over a given line; the use or non-use of tie-plates; weight of rail; etc. They are all very important factors in determining the advisability of a preservative treatment.

"Your speaker therefore earnestly recommends to the members of this Club the study and practice of timber preservation, both as an economic proposition and as a check on the rapid depletion of our forests."

Spring Session of American Railway Association.—The American Railway Association held its spring session in New York City on May 20th. One hundred and seventy delegates were present and the executive committee reported that the membership now comprises four hundred and three members representing 272,949 miles of road. The election of officers resulted as follows: H. U. Mudge (C. R. I. & P.), president for two years; R. H. Aishton (C. & N. W.) first vice-president and H. E. Byram (C. B. & Q.) and George L. Peck (Pennsylvania Lines) members of the executive committee. It was decided to hold the next regular session in Chicago, November 18, 1914. The following resolutions regarding the dimension of box cars was ordered to a vote by letter ballot of the Association.

Resolved, That the present standard inside dimensions of box cars as adopted by the Association on October 23, 1901, viz., 36 ft. in length, 8 ft. 6 in. in width and 8 ft. in height, should be adhered to, except in the construction of special equipment such as automobile cars.

Resolved, That special equipment should not exceed the inside dimensions of 40 ft. 6 in. in length, 8 ft. 6 in. in width and 9 ft. in height, with maximum outside dimensions of 9 ft. 2 in. in width at 13 ft. above the top of the rail.

Resolved, That the Master Car Builders' Association be requested at the earliest practicable moment to design and adopt a standard frame for closed cars in accordance with the present standard inside dimensions of box cars.

On the recommendation of the Committee on Weighing, a note was added to car service rule 11, providing that the market weight shall be the multiple of 100 pounds nearest the scale weight, except that when the scale weight indicates an even 50 pounds the lower multiple shall be used. The Committee also called attention to the fact that general supervision over packing and marking of freight was now being exercised by all of the five weighing and inspection bureaus. Two plans of stowing eggs in cars were approved by the Association as were certain regulations relative to the preservation of wrecked freight and the committee reported that the names of the two sub-committees have been changed to "Committee on Weighing" and "Committee on Packing, Marking and Handling of Freight." The membership of the latter Committee is to be increased to sixteen, the Freight Claim Association nominating five members each and the five weighing and inspection bureaus nominating one member and the American Railway Perishable Freight Association nominating one member, the other five members will remain as at present.

The Executive Committee reported the appointment of a special committee of presidents on standard freight cars. This action was taken on a petition from ten western railway companies, which said:

"With a view to greater economy in maintenance of equipment we have felt for some time past that the adoption of standard freight car equipment was most desirable. . . . We fully realize the difficulties in the way of such a movement, but we believe that by bringing the matter to the attention of the presidents of the roads that its importance will so appeal to them as to give instructions to their subordinate officers that will overcome the obstacles that have heretofore been in the way." . . .

The Executive Committee, deeming this recommendation of great importance and warranting hearty co-operation, decided to appoint a special committee; it will also instruct the Committee on Maintenance to assist that committee. The special committee consists of:

E. P. Ripley, President, Atchison, Topeka & Santa Fe; Fairfax Harrison, President, Southern; Samuel Rea, President, Pennsylvania; A. H. Smith, President, New York Central; J. Kruttschnitt, Chairman of the Executive Committee, Southern Pacific; Darius Miller, President, Chicago, Burlington & Quincy; Howard Elliott, Chairman of the Board, New York, New Haven & Hartford.

Attention was called to an effort being made in Ohio to have the railways of that State change their standard to Eastern time both for their timetables and for their offices, shops and freight houses, the idea being evidently to secure the adoption of Eastern time for the entire State of Ohio. The Association believes that great confusion in time keeping within the State would result should these efforts attain success and on recommendation of the Executive Committee the president appointed a committee on this subject to report at the November meeting of the Association. In the meantime, all members of the Association whose lines are located in the section assigned in 1883 to Central time are "earnestly requested to abstain from the use of Eastern time until the report of this committee shall have been presented and finally acted upon."

The committee is as follows:

E. B. Thomas, President, Lehigh Valley; B. McKeen, General Manager, Pennsylvania Lines West; C. W. Galloway, General Manager, Baltimore & Ohio; H. A. Worcester, General Manager, Cleveland, Cincinnati, Chicago & St. Louis; D. C. Moon, General Manager, Lake Shore & Michigan Southern; A. W. Johnston, General Manager, New York, Chicago & St. Louis; A. J. Stone, General Manager, Erie; M. S. Connors, General Manager, Hocking Valley; H. W. McMaster, General Manager, Wheeling & Lake Erie.

Proceedings of Twenty-third Annual Session of the Freight Claim Association, Held at the Hotel Galvez, Galveston, Texas, May 13, 14 and 15, 1914.—The Twenty-third Annual Session of the Freight Claim Association was called to order in the Hotel Galvez, Galveston, Texas, at ten o'clock A. M., Wednesday, May 13th, 1914, by President G. W. Perry, Freight Claim Agent, Great Northern Railway.

Hon. Lewis Fisher, Mayor-President of the City of Galveston, extended a welcome to the delegates and their families present, which was responded to by President Perry.

The President's annual address follows:

PRESIDENT PERRY: As this occasion marks the passing of another milestone in the history of our Association, it is customary at this time to briefly review the events of the past year.

The Secretary's report shows that we have had a very successful year, our net membership having been increased by twenty-seven, and, as the majority of our new members represent lines having a short mileage, it is evident the small lines find it to their benefit to join our ranks.

Your Conference Committee has been very active in your behalf since our meeting at Bluff Point.

The Standard Forms of the Presentation of Freight Claims have received the endorsement of the Interstate Commerce Commission, National Industrial Traffic League and the National Association of Railway Commissioners. These forms, outlining, as they do, the information required to substantiate claims, I suggest that, as an Association, as well as individually, we urge the use of these blanks by shippers.

Your Conference Committee, by the request of the Interstate Commerce Commission, assisted in preparing a form of statistics to be required of the carriers, which is embodied in Special Circular, Series No. 17, effective January 1st, 1914.

While these statistics are expensive to compile, as they are largely in addition to other statistics kept by each carrier to conform to their own particular requirements, the foundation has been laid for a uniform and scientific analysis of causes for delayed settlements, as well as by causes and commodities, entering into the great waste of money caused by loss and damage claims.

It remains for the Commission to decide whether the figures so obtained will be used to improve the claim situation.

A glance through an ordinary claim will reveal that at least one-half of the papers contribute nothing to the subject matter, but rather tend to general confusion, the salient features being often overlooked by investigators.

This condition, in my opinion, is largely caused from the use of printed investigation forms. We are trying to obtain information by machinery rather than by the human element and the use of such forms not only tends to discourage initiative, but they do not command the respect and attention of the addressee as a written letter would.

I do not believe results are obtained more promptly by using these printed question forms. If they are, why not have a printed form of answers, which could be arranged with the same ease as the questions asked?

A conservative estimate of the number of interline loss and damage claims during the past year is one million. Of that vast number, only 658 have been placed in arbitration, and only 156 have reached our Appeal Committee. While this is an increase over the previous year, it is not out of proportion to the increase in claims. These figures, however, suggest the question of the advisibility of another arbitration committee.

That our Constitution, Rules and Rulings have enabled us to adjust all but a fraction of these claims without friction and that such a small number contained elements on which the carriers are unable to agree, speaks well for our legislation.

In the case of all litigation there must be a prevailing and a losing side.

Ex-President Taft, speaking recently on the recall of judicial decisions, used these words:

"Now, it is impossible for a constitution to cover in its letter every phase of its application. It must be construed by someone, and its meaning, in special cases, must be declared by some authority and there are no men better fitted for this task than independent judges who are schooled in the construction of legal language and who exercise their judgment in accordance with their best lights of experience."

This question, it appears to me, is particularly appropriate in its application to our Arbitration and Appeal Committees.

We have several cases in which members have refused to abide by the decision of the Arbitration and Appeal Committees and which you may be called upon to consider, but I trust these differences will be amicably adjusted so that it will not be necessary to bring them before this session.

We have been successful as an association only because our Constitution, Rules and Rulings are mandatory. Without this mandatory provision, the situation to-day as respects freight claims would be chaotic.

In a paper read with approval before the General Superintendents' Association of Chicago on November 26th, 1913, appears the following:

"Without fear of successful contradiction, I venture the assertion that the Freight Claim Association is the strongest of all railroad organizations in the interest of railroads in America, and that it has done more in the unification of individual effort, and accomplished more than any other railroad organization along the lines of their endeavors, its purpose being the formulating of rules mandatory in their application by which the railroads can equitably adjust claim settlements as between themselves, and the need of this Association, the maintenance of which costs the railroads thousands of dollars annually, is questioned by none. Its creation, it might be said, was more of an evolution than anything else, the outgrowth of loss and damage to freight in transit, forcing as it did upon the railroads the need of a court of justice and such a tribunal they have in the Freight Claim Association, its last recodification of rules being as fair as any law of the land.

"I preface my general remarks with this statement of facts merely to impress upon you the strength of an organization founded upon loss and damage, but sad to relate, an organization founded not to prevent loss and damage, but to mitigate, to make less severe, the penalty we must pay for negligence and misguided effort.

"Suppose the strength of the Freight Claim Association, so broad in its scope, so fair in its judgment, should swerve about, face loss and damage from another point of view and attack it with its full strength of force, made doubly strong because of its impartiality, its slogan being 'Prevent loss and damage,' instead of 'Adjust loss and damage,' what would be the results?

"I may answer that query, and fairly and squarely, when I say 'Complete victory'—but the railroads have need of the Freight Claim Association. It has a definite purpose. The strength of its fortification must not, through diversion, be weakened, but there is no reason in the world why the operating departments of the railroads of this country cannot organize themselves into a bulwark of strength equally as strong and equally as efficient as the Freight

Claim Association, but having for its purpose the prevention of loss and damage, instead of the adjustment of loss and damage, and not until we do will we be able to relieve our operating accounts of the heavy burden they now bear, reaching on some railroads to more than three per cent of their gross operating revenue."

The above is only an extract from the paper read.

The Loss and Damage Committee of the General Managers' Association of the Southeast, in File 243, Docket 729, of March 25, 1914, is of the opinion that instead of creating any new association, the logical thing to do is for the managerial officials of railroads in America to express to their freight claim departments a desire for the Freight Claim Association to amend its Constitution and turn its attention actively to the prevention of claims, and resolved:

"That the Freight Claim Association be requested to enlarge its scope of activity to include the study of claim causes, the development of suggestions for standard practices for the proper handling of interline freight, and to consider the application of remedies to prevent losses, damages, delays, et cetera; that to such end, they be further requested to organize a committee or committees for the special purpose of studying the prevention of claims and to suggest standard practices for the receiving, packing, marking, loading, billing, transferring and delivery of interline freight."

The adoption of this resolution is now before the General Managers' Association of Chicago.

We need nothing more to show the high regard in which this Association is held. We must justify this confidence. We cannot stand still; we must go forward or backward.

You will consider at this session legislation to enlarge the scope of this Association to include causes and remedies. Now is our opportunity to meet fairly and squarely these new conditions, and prove that this Association is as efficient in the field of prevention and remedies as we have been successful in handling claim settlements.

We have behind us the power of the Government in prosecuting those guilty of presenting fraudulent claims, as is evidenced by convictions during the past year and cases now pending.

In conclusion, I wish to gratefully acknowledge the assistance rendered by our Secretary. We are indeed fortunate in having the position filled by a man of so much tact and good judgment, in addition to his other lovable qualities.

The roll call showed that there were present or represented by proxy 157 members. There were also present a number of visitors, including Mr. Fred W. Sweney, Chief Examiner of Accounts, Interstate Commerce Commission, and Mr. Robt. E. Quirk, Examiner, Interstate Commerce Commission.

On motion, duly seconded, Messrs Sweney and Quirk were extended the privileges of the floor.

The Secretary and Treasurer reported that the roll on the first day of May, 1914, numbered 426, representing over 261,000 miles of road (in addition to the mileage of the steamship lines) in the United States, Canada and Mexico, 45 new members having been admitted during the preceding eleven months. The finances of the Association were reported in excellent condition, all bills due having been paid and, of the items due the Association, all except a very small percentage having been collected, leaving a gratifying balance in bank to the credit of the Association.

There were considered in the order named, the reports of the following committees:

Committee on Constitution and By-Laws.
Conference Committee.
Committee on Methods and Topics.
Committee on Loss and Damage Rules.
Joint Report of Committees on Loss and Damage and Overcharge Rules.
Committee on Overcharge Rules.
Committee on Accounts.

New Work to be Taken up by Association—Causes and Prevention of Freight Claims.

The Committee on Constitution and By-Laws, in its report, recommended that the scope of the work of the Association be enlarged so as to include the study of causes and prevention of freight claims. That recommendation was adopted and the work will be undertaken by a new standing committee to be known as the "Committee on Cause and Prevention."

This new work on the part of the Association when proposed received the earnest endorsement of the General Managers' Association of the Southeast, General Managers' Association of Chicago, General Superintendents' Association of Chicago, and General Managers' Association of Texas. The Association was assured of the most hearty co-operation of the operating departments of the carriers in its activities along the lines indicated, the opinion being expressed that, inasmuch as the Freight Claim Association occupies such a position of prominence and strength and in view of the close contact into which its members are brought with the individual cases of loss and damage to freight sustained by the carriers and with the apparent reasons for such losses and damages, the Freight Claim Association is the most logical and proper organization to take up the work of prevention, in connection with other interested railroad associations.

The Association feels that it should welcome this opportunity for service and the President will promptly appoint the committee which is to undertake the task. It is predicted that, with the complete co-operation of the others interested, an inestimable amount of good will be accomplished in the obviation of causes and the consequent substantial reduction in the claim accounts of the carriers.

Publication of Appeal Decisions.

There was adopted, also, the recommendation of the Committee on Constitution and By-Laws that that portion of the Constitution providing for the publication of the decisions of the Appeal Committee be so amended as to require the publication by the Secretary only of such cases as may be designated by the Chairman of the Appeal Committee. This will avoid the expense and labor incident to the publishing of cases which are analogous and which cover points which have already been decided and published a number of times and will make the work more effective.

It was also provided that the decisions of the Appeal Committee shall be binding upon the members of the Association, as well as upon the Arbitration Committee.

WORK OF THE CONFERENCE COMMITTEE.

The report of the Conference Committee was presented by Chairman Stanley and duly accepted. It showed that since the 1913 annual session a number of important matters under consideration with the representatives of the Interstate Commerce Commission had been brought to a conclusion.

The restatement of Conference Ruling No. 15 is considered of particular importance, the new Ruling reading as follows:

CARRIER MUST INVESTIGATE BEFORE PAYING CLAIMS.

"A carrier cannot shield itself from responsibility in paying a claim by accepting authority of a connecting line to pay it, but must ascertain the lawfulness of the claim and allow it or not upon the basis of its own investigation. This is not to be understood, however, as requiring each carrier interested in the claim to make an independent investigation. The principle of direct investigation embodied in the rules of the Freight Claim Association, whereby the carrier against which a claim is presented undertakes to make the investigation for itself and for the other carriers concerned in the joint movement out of which the claim arises, is approved by the Commission as a means of expediting the adjustment of claims. In all cases, however, the investigation so made must be thorough and must disclose a lawful basis for the payment before the ? ? ?

This endorsement of the rules of the Freight Claim Association is very gratifying and it is felt that it will have a tendency to add to the strength of the Association and enable it to accomplish more good in the claim world.

Also, the Standard Forms of Presentation of Claims, prepared during the previous year in connection with the representatives of the Interstate Commerce Commission, National Industrial Traffic League and kindred organizations, were reported as having been very generally adopted throughout the country by carriers and claimants alike, and much good is anticipated from their use.

The Special Report on Freight Claims called for by the Interstate Commerce Commission on the form prepared last year by its representatives in connection with the Conference Committee and committees from the Association of American Railway Accounting Officers and American Railway Association, became effective January 1, 1914, but it is not yet, of course, known what results will be shown.

There are several other matters, including "Interest on Claims," "Prorating Deficits," and "Concealed Loss and Damage," which will be further considered at a later time by the representatives of the Interstate Commerce Commission, the Conference Committee and such other organizations as may be interested.

METHODS AND TOPICS MATTERS.

The various suggestions and recommendations carried in the very able report of the Committee on Methods and Topics were considered, some being referred to the new Committee on Cause and Prevention and others being referred to the appropriate incoming committees or received as information. The subjects dealt with were as follows:

Stamping Less Carload Package Freight.
Cancellation of Internal Revenue Tax.
Forms Used in Handling Overcharge Claims.
Overcharge Distribution Statement—Form Proposed by Western Lines.
Marking Freight with Shippers' Names and Addresses.
Method of Requesting Disposition of Freight.
Showing Weight on Shipping Orders.
Concealed Loss and Damage.
Section 3, Uniform Bill of Lading.
Showing Causes and Commodities on Loss and Damage Distribution Statements.
Securing Information from Other than Freight Claim Officials.
End Doors.
Use of Stamp for Showing Transfer Exceptions.
Uniform Practice to be Observed for Returning Claim Papers to Official of Paying Carrier.
Prevention of Loss and Damage Claims.
Receiving, Billing, Loading, Handling and Delivering Freight.
Astray Freight.
Defective Equipment.
Disposition of Refused and Unclaimed Freight.
Locating Individual Responsibility.
Standard Over, Short, Damage and O. K. Forms.
Study of Claim Conditions.

ELECTION OF OFFICERS, SELECTION OF PLACE FOR NEXT SESSION, ETC.

The following officers and members of Arbitration and Appeal Committees were elected for the ensuing year, viz.: President, J. W. Newell, Aud. Frt. Accts., Chicago, Burlington & Quincy R. R. First Vice-President, E. Arnold, Freight Claim Agent, Grand Trunk Ry. Second Vice-President, W. O. Bunger, Freight Claim Agent, C. R. I. & P. Railway. Secretary and Treasurer, Warren P. Taylor, Traffic Manager, R. F. & P. R. R. and Wash. Sou. Ry.

Arbitration Committee "A"—G. C. Arnold, Chairman, F. C. A., Lehigh Valley R. R.; H. R. Grochau, F. C. A., C. St. P. M. & O. Ry.; T. S. Walton, F..C. A., Missouri Pacific Ry.

Arbitration Committee "B"—R. Kemp Slaughter, Chairman, Auditor, Atlanta, Birmingham & Atlantic R. R.; D. B. Daley, F. C. A., Kansas City Southern Ry.; H. F. Bidwell, F. C. A., Boston & Maine R. R.

Arbitration Committee "C"—J. M. Eadson, Chairman, F. C. A., Michigan Central R. R.; H. M. Noors, F. C. A., M. L. & T. R. R. & S. S. Co.; E. A. Jack, F. C. A., Terminal R. R. of St. Louis.

Appeal Committee—J. J. Hooper, Chairman, F. C. A., Southern Railway; A. B. Thompson, F. C. A., D. L. & W. R. R.; F. E. Shallenberger, Auditor, Union Line; J. F. Horrigan, F. C. A., Northern Pacific Ry.; J. M. Brewer, F. C. A., Southern Pacific Co.—Pacific System.

The Conference Committee was continued, with the same powers as heretofore.

Chicago, Ill., and the third Wednesday in June, 1915 (16th), were selected as the place and date for the next, or Twenty-fourth Annual Session.

Adjournment was taken at 11.45 A. M., Friday, May 15th.

LEGISLATION.

Proposed Legislation Covering Passenger Train Equipment.—The Special Committee on Relations of Railway Operation to Legislation has issued a bulletin with reference to the proposed legislation covering steel and steel underframe passenger train equipment and the estimated cost to the carriers in making the change demanded in the various bills now before Congress. The bulletin follows:

"Seven bills are pending in Congress requiring the replacement of wooden passenger train equipment in steel. The periods suggested during which this is to be done vary from January 1, 1915, to ten years from enactment of the law; in some cases with extensions of time in the discretion of the Interstate Commerce Commission.

"Three bills are pending which, among other things, leave to the discretion of the Interstate Commerce Commission the operating conditions under which wooden cars must be replaced with steel equipment, and the time for such replacement.

"To ascertain the progress of the building of steel and steel underframe passenger equipment, and to develop the cost of reconstruction in steel of the present wooden passenger equipment in the country, Circular No. 53 was issued by the railways on January 2, 1914.

"Replies to that Circular have been received from 227 companies, operating 236,720 miles in the United States, and 58,660 passenger equipment vehicles, with 3,144 under construction on January 1, 1914.

"Replies have also been received from eleven companies, operating 27,030 miles in Canada, and 5,118 passenger equipment vehicles, with 240 under construction on the same date.

"The estimates and percentages given hereafter apply only to the equipment operated by roads in the United States.

"It will be noted that there were but fifteen wooden passenger train cars under construction January 1st, only two of which were intended for the use of passengers

Acquired in	Total number.	Steel	Steel under-frame.	Wood.
1909	1,880	26.0%	22.6%	51.4%
1910	3,638	55.4	14.8	29.8
1911	3,756	59.0	20.3	20.7
1912	2,660	68.7	20.9	10.4
1913	3,350	63.0	30.4*	6.6
Jan. 1, 1914. Under constr'n) .	3,144	86.9	12.6*	0.5

*This figure includes wooden cars reconstructed with steel underframe.

"The rapid increase in steel and steel underframe cars is shown below:

Approximately in Service.	Steel.	Steel under-frame.
January 1, 1909	629	673
January 1, 1910	1,117	1,098
January 1, 1911	3,133	1,636
January 1, 1912	5,347	2,399
January 1, 1913	7,271	3,296
January 1, 1914	9,492	4,608
Increase 1914 over 1909	8,863	3,935
Increase 1914 over 1909	1,409%	585%

"The number of wooden cars in service January 1, 1912, was 48,126. There are now in service approximately 44,560 indicating the retirement from service of 3,566 wooden cars in two

STEEL AND STEEL UNDERFRAME PASSENGER TRAIN EQUIPMENT

SECTIONS	Number of Roads	In Service December 31, 1913			Under Construction or Contracted for but not yet Received on Dec. 31, 1913			Acquired in Calendar Year 1913			Acquired in Calendar Year 1912			Acquired in Calendar Year 1911			Acquired in Calendar Year 1910			Acquired in Calendar Year 1909		
		Steel	Steel Underframe	Wood	Steel	Steel Underframe	Wood	Steel	Steel Underframe	Wood	Steel	Steel Underframe	Wood	Steel	Steel Underframe	Wood	Steel	Steel Underframe	Wood	Steel	Steel Underframe	Wood
New England..........	8	105	153	5,033	278	2	....	75	29	7	16	22	103	....	14	422		24	193	10	6	114
East..........	64	3,767	1,430	14,287	1,313	142	12	730	339	40	952	323	22	889	204	99	583	82	230	167	58	182
Southeast..........	50	235	681	4,786	93	27	....	168	96	34	27	87	17	37	219	68	6	27	102		157	77
Northwest..........	28	355	154	3,662	142	5	....	38	67	8	85	25	68	141	....	99	75	1	348	12	....	150
Southwest..........	38	389	332	3,228	82	3	1	45	6	37	109	53	56	78	28	61	90	41	89	24	30	68
West..........	38	2,526	1,230	9,281	612	11	2	209	49	16	357	33	10	550	298	30	743	363	68	209	174	108
Sleeping Car Co's..........	1	2,115	*628	4,283	214	*205	....	786	*443	**78	283	*12	....	519	....	....	519	....	54	6	....	268
Total United States	227	9,492	4,608	44,560	2,734	395	15	2,111	1,019	220	1,829	555	276	2,214	763	779	2,016	538	1,084	488	425	967
		58,660			3,144			3,350			2,660			3,756			3,638			1,880		
Canada..........	11	1	51	5,066	88	124	28	....	26	450	1	6	533	....	....	231		...	178		....	121
		5,118			240			476			540			231			178			121		
Total U. S. and Canada..........	238	9,493	4,659	49,626	2,822	519	43	2,111	1,045	670	1,830	561	809	2,214	763	1,010	2,016	538	1,262	488	425	1,088
		63,778			3,384			3,826			3,200			3,987			3,816			2,001		
CLASSES OF EQUIPMENT:																						
Postal..........		688	223	582	165	8	....	101	18	....	30	10		286	88	11	140	10	11	52	30	5
Mail and Baggage..........		411	345	2,672	236	44	1	104	46	13	123	56	8	95	47	36	43	34	70	17	17	65
Mail, Baggage & Passenger		27	53	584	3	....	....	10	6	2	9	2	4	3	12	4	6	7	7		4	17
Baggage and Passenger...		376	204	3,600	150	16	....	95	40	16	123	32	18	45	29	42	110	16	64	12	22	62
Baggage or Express..........		1,056	1,112	7,259	379	5	10	184	238	16	188	90	89	233	200	173	324	99	89	86	171	162
Passenger..........		3,487	1,596	22,487	1,403	95	2	651	166	75	856	302	126	887	214	413	726	333	505	260	158	281
Parlor, Sleeping & Dining..		2,622	838	6,405	326	226	....	915	486	88	396	51	13	640	36	94	648	37	316	33	22	365
Business..........		23	103	740	5	1	2	11	13	10	5	10	10	3	15	4	1	2	15	1	1	9
Motor..........		802	134	231	67	....	....	40	6	....	99	2	8	22	2	2	18		7	27		1
Total United States..........		9,492	4,608	44,560	2,734	395	15	2,111	1,019	220	1,829	555	276	2,214	763	779	2,016	538	1,084	488	425	967
		58,660			3,144			3,350			2,660			3,756			3,638			1,880		

Mileage:	
United States..............	236,720
Canada..............	27,030
Total	263,750

*Wooden cars reconstructed with steel underframes

**Acquired by purchase.

years. Of this number 2,366 were retired during the calendar year 1913.

APPROXIMATE COST OF REPLACEMENT OF WOODEN CARS.

Approximate Cost of Replacement of Wooden Cars.

	Number.	Average Cost.	Amount.
Postal	582	$11,000	$ 6,402,000
Mail and baggage	2,672	10,000	26,720,000
Mail, baggage and passenger	584	10,000	5,840,000
Baggage and passenger	3,600	10,000	36,000,000
Baggage or express	7,259	8,500	61,701,500
Passenger	22,487	12,800	287,833,600
Parlor, sleeping, dining	6,405	22,000	140,910,000
Business	740	15,000	11,100,000
Motor	231		4,620,000
Total	44,560		$581,127,100
Annual interest charge at 5%			$29,056,355

"The charge to operating expenses under the classification of accounts of the Interstate Commerce Commission, assuming a value of $4,000 per vehicle replaced, will be $178,240,000."

Cost of Complying with Full Crew Laws.—The Special Committee on Relations of Railway Operation to Legislation on March 10, 1914, issued a bulletin showing the results of its investigation regarding the total cost to the carriers of complying with the full crew laws passed by the various States. In this bulletin, the cost of ninety-eight roads was reported as $6,800,729 per annum. A latter investigation, however, indicates that the figures given for the State of Texas were in error. The Committee has therefore, issued another statement in which it places the total cost per annum for all roads reporting as $5,769,174.

Six Months' Report of the Special Committee on Relations of Railway Operation to Legislation.—The Special Committee on Relations of Railway Operation to Legislation, has issued a general report covering its activities during the six months from November 1, 1913 to May 4, 1914, inclusive. The Committee's activities are reviewed in the following manner:

"In its last report your Committee forecast the proposal to increase largely the discretionary power of the Interstate Commerce Commission over railway construction, maintenance and operation. Bills having this in view have been introduced into Congress and are now pending.

"It is evident that there is a well defined movement to substitute legislation of this character for that prescribing in specific terms the things that shall be done. So far as the general principle is concerned, your Committee feels that if legislation on any operating matter be enacted it should permit the exercise of a proper discretion on the part of such body as can wisely use it, rather than make an inflexible requirement which in many circumstances ought not to or could not be enforced. The precise form which such legislation should take, however, is a matter of such vital concern and involves so many considerations that your Committee has preferred to wait until the varying propositions were more clearly defined before seeking the counsel and advice of the roads as a whole.

"If circumstances so shape themselves that general legislation of this character is probable at this session of Congress, the Railways will be given notice thereof, and such suggestions as your Committee has matured will be placed before you for discussion. Your Committee in this, as well as in other matters, is keeping in close touch with the Railway Executives' Advisory Committee on Federal Relations, and with the Law Committee associated with it.

Laws Enacted.

"Since the last report was made no legislation affecting railway operation has been passed by either House of Congress.

Operating Bills Pending.

"Exhibit No. 3 shows the bills relating to operation pending in the present Congress, subdivided as between those on which there have been hearings before committees and those on which hearings have not been called.

"Your Committee has presented witnesses to deal with the provisions of these bills as indicated in the Exhibit and will present testimony on these and others when opportunity offers. There have been no hearings before any Committees of the Senate.

Boiler Inspection.

"The Chief Inspector of Locomotive Boilers having asked for a conference with the railways in regard to the factor of safety for locomotives in service or under construction prior to January 1, 1912, this conference was held on April 28, 1914, the railways being represented by the Mechanical Sub-Committee.

"As a change in rules is involved, it will be necessary for the Interstate Commerce Commission to deal with the subject after notice and hearing. Full information will be given as these negotiations proceed. (See Circulars 57 and 58, issued April 15 and 17, 1914, respectively.)

Steel Passenger Equipment.

"To bring the information as to the progress and construction of steel and steel underframe passenger equipment cars up to date, your Committee issued Circular No. 53 asking for the necessary information. A bulletin will be issued in the near future.

Specifications for Steel Postal Cars.

"Tests of insulating methods and materials which have been under way for the past eight months have now been completed and the Mechanical Sub-Committee having this matter in charge will be shortly in a position to discuss the matter with the representatives of the Post Office Department, and to make a definite recommendation on this subject.

"The completion of the paragraph regarding insulation will be the final step in the complete specification for steel and steel underframe postal car construction.

Locomotive Headlights.

"Three bills are pending in Congress with respect to uniform headlights.

"In view of the numerous state laws existing on this subject (see Bulletin No. 52, July 16, 1913), it is thought that federal legislation along proper lines is desirable.

"At a hearing before a Sub-Committee of the House Committee on Interstate and Foreign Commerce, the argument for the railroads, based upon an investigation made by the American Railway Master Mechanics' Association, was presented so fully and completely that your Committee has published it for the general information of the railways. (See Bulletin No. 58, April 23, 1914.)

"Your Committee has also ascertained, in response to Circular No. 54, the number and character of headlights in use on upwards of 67,000 locomotives in the country, and this information has been made a part of the bulletin referred to above.

FEDERAL INSPECTION OF GRAIN.

"Two bills are pending in Congress covering this subject; one, Senate 120, placing the inspection of grain going into interstate commerce in the hands of the federal government; and the other H. R. 14493, giving the federal government supervision over the existing methods and creating uniform standards.

"Your Committee has obtained a large amount of information as to the manner in which the first named bill would affect railway interests, chiefly in the detention to which it will subject cars under the proposed plan. (See Circular No. 55, February 14, 1914.)

"This information has been made use of and substantial amendments have been made in this bill on the floor of the Senate.

"Up to the present time no opportunity has been afforded for presenting witnesses on this subject, and it is hoped that the legislation may take such a form to obviate all objections thereto.

PRIVATE CAR INVESTIGATION.

"At the request of a number of roads, your Committee canvassed the railways of the country generally to ascertain if it was desired that it undertake the presentation of the railway's case before the Interstate Commerce Commission. (See Circular No. 52, December 10, 1913.)

In response to this circular 132 roads, operating 199,468 miles, authorized your committee to so represent them and to pay the necessary expense out of its general funds, such expenses to be ultimately assessed upon the roads joining in the movement on a mileage basis.

"Your Committee thereupon designated the Chairman of the Committee on Relations between Railroads of the American Railway Association, and the Chairmen of the four General Managers' Associations to act as a Committee on Private Cars to conduct the railways' case. (See Bulletin No. 56, January 28, 1914.)

"Hearings before the Commission have been finished and the work of the Committee on Private Cars so far as this particular authority is concerned will be concluded within the near future by the preparation of the necessary brief and argument.

"The expense of this proceeding up to May 1, 1914, is shown in the financial statement under the heading of 'Advances for Account of Private Car Investigation.'

MINIMUM (FULL) CREWS.

To complete the data on this subject, your Committee has published as Bulletin No. 57, March 10, 1914, a tabulation of the replies received from roads operating 202,000 miles, giving an estimate of the number of trains affected and the amount of money involved in the application of the State Full Crew Laws.

"The laws themselves, with an analysis, thereof, will be found in Bulletin No. 55, October 17, 1913.

"The total estimated annual additional cost of these state laws is $6,800,000.

STATE LEGISLATION.

"Your Committee has continued its arrangement of keeping itself informed of all bills affecting railway operation introduced and passed in all states and has notified its supporters accordingly.

"Most of the State Legislatures which were in session in 1914 have adjourned. Some are, however, still in session and upon their adjournment the usual bulletin will be issued showing the number of laws introduced and passed affecting railway operation.

STATE COMMITTEES.

"Your Committee has urged that the State Committees, which were formed to handle matters before the Legislatures which met in 1913, continue their organization in order that the necessary work preliminary to the meetings of these same legislatures in 1915 may be undertaken without loss of time.

"This course is being very generally pursued."

New York Central Inquiry Shelved.— By a vote of 33 to 20, the Senate has sent to the Committee on Interstate Commerce the Norris resolution providing for an investigation of the New York Central Railroad System by the attorney general. This action is significant in that a majority of the members of the committee are believed to be unfriendly to the investigation on the ground that the railroads need rest and that no public purpose would be served by prodding the Department of Justice to a task which is clearly within its province without the necessity of any spur from Congress.

Panama Toll Repeal Bill Signed by the President.—On June 15th, President Woodrow Wilson placed his signature upon the Panama Canal tolls repeal bill. The bill as finally passed by the House of Representatives on June 12th, contained the Senate amendment which declares that the United States does not relinquish any right it may have to exempt its vessels from tolls. The vote in the House was 216 to 71, while the vote in the Senate was 50 to 35.

Government of Alaska By Development Board.—Secretary Lane of the Interior Department has sent a report to Congress in which he urges the creation of a development board to be in complete control of the natural resources of Alaska. The plan urged by the Secretary provides for a board of three members to be appointed by the Commission and confirmed by the Senate which is to have headquarters in Alaska. This Board will take over such authority now exercised by various departments and bureaus as would be necessary to give it supervision over practically the entire public domain. According to Commissioner Lane this should include the control of water powers, building and maintenance of roads and trails and operation and rates of the railroads and telegraph lines. It should include protection and control of game, fur-bearing animals, public lands, mineral deposits, coal, oil, gas, hot-springs, timber lands and timber.

Railroads Opposed to Rayburn Anti-Trust Bill.—Judge Robert S. Lovett, chairman of the Union Pacific Board, appeared before the Senate Interstate Committee on June 3rd, in opposition to the proposed Rayburn Bill to regulate the issuance of railroad securities which he believes to be a menace to the prosperity and development of the carriers of the country. Judge Lovett contended it would disrupt many of the great railroad systems; that under it the Union Pacific would be separated from the Oregon Short Line; that it would impair the value of railroad securities and that some systems would be forced into the hands of receivers because they would not be able under it to finance their necessities.

A. H. Harris, general counsel for the New York Central, and Edward P. Ripley, president of the Atchison, Topeka and Santa Fe Railroad, took substantially the same view.

Judge Lovett objected to the section which prohibits a person serving on more than one railroad board, whether there is any competition or not, without the consent of the Interstate Commerce Commission.

Judge Lovett also particularly objected to that clause of the bill which prevents the issuance of new securities except where they are, in the language of the bill, necessary in the public interest to the proper performance of its service for the public. He pointed out that this provision would prevent the railroads from making improvements from cash on hand and later recouping the treasury so as to restore the amount of cash on hand for the purpose for which it was being saved by the sale of bonds. He also called attention to the fact that the proposed law would usurp many state functions and deny the railroads the right of exercising privileges given them by the States, while at the same time it did not take away the state supervision by providing federal incorporation. George F. Brownell, vice-president and general counsel of the Erie Railroad, also spoke vigorously in opposition to the bill and declared that under its supervision the members of the Interstate Commerce Commission would become a system of interlocking directorates of vaster powers than anything which is dreamed of by Congress in proposing legislation against interlocking directorates.

Bill to Regulate Water Carriers.—A bill to regulate water carriers engaged in foreign and domestic commerce of the United States, has been introduced in the National House of Representatives by Representative Alexander. The legislation is aimed at the so-called steamship pool and represents the result of an inquiry into the activities of the so-called shipping trust. It is the first attempt which has been made in the halls of Congress to bring the vast water transportation interests under a comprehensive system of Government supervision. The bill declares that deferred rebate arrangements, whether in export, import or domestic trade, to be illegal.

Copies of all arguments and conference arrangement between steamship lines must be filed for approval with the Interstate Commerce Commission. Such arguments as are approved by the Commission shall be excepted from prosecution under the anti-trust law. Those that are disapproved must be withdrawn or take the risk of prosecution.

Discriminatory practices of all kinds giving unfair preferences, or advantages or persons and localities, false bills, false classification and false weighing are made unlawful under the bill. Both foreign and domestic carriers are prohibited from carrying in retaliatory measures against shippers by refusing or threatening to refuse space when such are available. Rate cutting or injuring a competitor is prohibited. The commission is authorized to reduce rates when they are found to be unreasonably high or excessive.

Water carriers are required to observe the same rules in the filing of rates enforced against railroads. The commission is empowered to investigate all complaints filed by shippers in matter of cargo, space accommodations or unfair or discriminating contracts with shippers or other unfair treatment, and to order the discontinuance of all practices found to be in conflict with the law.

Three or four series of the bill have an important bearing on the relation of water transportation. It is made unlawful for any railroad to discriminate between a rail and water route. Railroads are prohibited from acquiring any interest directly or indirectly in any canal in the United States or in any common carrier or forwarding company on such canal unless such acquisition is approved by the Interstate Commerce Commission. Railroads can also be required by the commission to account separately for the income, expenses and other financial and property characteristics of water carrier in which it may be interested.

The penalties provided by the bill are severe. Any water carrier that fails to file any agreement with any other water carrier when called on to do so by the commission is made liable to a fine of $1,000 for each day during which such offense continues.

The bill contains a prohibition against the issuance of free tickets or free passage or transportation to passengers. Violation of this provision is made a misdemeanor punishable by a fine of not less than $100 or more than $2,000.

Other prohibitions by the bill are made misdemeanors punishable by a fine not to exceed $5,000 for each offense. If the offense constitutes an unlawful discrimination in rates, fares or charges, the person found guilty is liable to imprisonment for a term not exceeding two years, as well as a fine of $5,000 or both such fine and imprisonment in the discretion of the court.

LEGAL.

Spur Track Charge Illegal.—In a decision on June 8th, the Supreme Court of the United States upheld the Interstate Commerce Commission's order forbidding the Santa Fe and Southern Pacific Railroads to charge for shunting freight cars on and off industrial spur tracks. This ends a case which has been disputed since 1908. In that year the Associated Jobbers of Los Angeles filed a complaint before the Interstate Commerce Commission. It was set forth that the spur track charge illegally cost shippers of this city alone more than $300,000 a year. In rendering a decision declaring the charge illegal Franklin K. Lane, then an Interstate Commerce commissioner, estimated that if the railroad exacted similar charges in every large city of the country, it would cost shippers between $250,000,000 and $300,000,000 a year. The decision of the Supreme Court probably means that the railroads will have to refund the shippers and consignees of Los Angeles between $1,000,000 and $2,000,000, already collected illegally as switching charges.

Supreme Court Rules in Favor of Florida East Coast Railway.— The Supreme Court handed down another decision on June 8th, which will prove of interest to railway officials and will enable the Florida East Coast Railway to charge higher freight rates on citrus fruits and vegetables. The Interstate Commerce Commission had issued an order lowering the rates on the commodities shipped over the Florida Road. The Chief Justice, who rendered the opinion in this case, laid down the principle that while the Interstate Commerce Commission was charged with the sole authority to ascertain facts in any given case and enter an order in accordance therewith, the court was not precluded from looking into the record to ascertain whether the facts disclosed sufficient warrants for large rates. In this case the court was of the opinion, the Chief Justice said, that there was nothing in the facts disclosed by the record to sustain the order made by the Commission lowering the rates and the order would operate as a confiscation of the carrier's property and was therefore void.

Supreme Court Rules Against States in Shreveport Decision.—An epoch making railway rate decision was handed down by the Supreme Court of the United States on June 8th, in what was known as the Shreveport case. Under the decision the authority of the Federal Government to regulate interstate commerce through the Interstate Commerce Commission is made practically supreme. State laws and orders of state commission conflicting with the federal laws must give way and vexatious orders or regulations promulgated by the state authorities as burdens on interstate commerce can be set aside by orders of the Interstate Commerce Commission. The decision, which was handed down by Justice Hughes, holds in effect, that rates fixed by a state even for traffic, wholly within that state, must give way to orders of the Interstate Commerce Commission when it finds that the local regulations effect a real discrimination in interstate commerce. The decision is undoubtedly a blow to the state rights doctrine and will curtail the activities of many state commissions. The decision rests upon an order of the Interstate Commerce Commission declaring that discrimination arose from the observance of State rule even for intrastate rates. That order is sustained.

The decision was announced by Mr. Justice Hughes. The case arose out of complaint by Shreveport (La.) merchants that the Texas Railroad Commission had shut them out of all Texas business by compelling the railroads to reduce Texas State rates far below what the Interstate Commission allowed the railroads running from Shreveport to Texas cities to charge.

The court first decided that Congress had power to control intrastate charges of an interstate carrier to the extent necessary to prevent injurious discrimination against interstate traffic and then held that Congress had conferred this power upon the Interstate Commerce Commission.

"It is the essence of the power to regulate interstate commerce that where it exists, it dominates," said Justice Hughes. "The fact that carriers are instruments of intrastate commerce as well as of interstate commerce, does not derogate from the complete and paramount authority of Congress over the latter or preclude the Federal power from being exerted to prevent the intrastate operations of such carriers from being made a means of injury to that which has been confided to Federal care.

"Wherever the interstate and intrastate transactions of carriers are so related that the government of the one involves the control of the other it is Congress and not the State that is entitled to prescribe the final and dominant rule, for otherwise Congress would be denied the exercise of its constitutional authority and the State and not the nation, would be supreme within the national field."

In removing discriminations against interstate commerce the Court held Congress was not bound to reduce the interstate rate below what it may deem to be a proper standard to the carrier and the public.

"Otherwise," said the opinion, "it could prevent the injury to interstate commerce only by the sacrifice of its judgment as to interstate rates."

Justice Hughes, who wrote the court's decision in the state rate cases of a year ago, pointed out that the present case did not conflict with those cases. He said that undoubtedly in the absence of a finding by the commission of unjust discrimination, intrastate rates were left to be fixed by the carrier and subject to the authority of the States.

"We are not unmindful of the gravity of the question that is presented when State and Federal views conflict," the opinion concluded. "But it was recognized at the beginning, the nation could not prosper if interstate and foreign trade were governed by many masters, and, where the interests of the freedom of interstate commerce are involved, the judgment of Congress and of the agencies it lawfully establishes must control."

STATE COMMISSIONS.

Michigan.—Chairman Lawton T. Hemans, of the Michigan Railroad Commission, in a recent discussion of the American transportation question with a representative of the "Saturday Night," a Detroit publication, indicated that the movement of the nation's commerce is dependent alike upon the railroads and the waterways and that the development of these highways of trade should be carried on uniformly and with full measure of public support.

"Can you tell me," asked Commissioner Hemans, "why we get so excited when we hear that the government is going to do something for American ships, and why on the other hand we seem to care so little about doing anything for American railroads? Some of us are deeply perturbed because American ships may have to pay tolls for carrying freight through the Panama Canal; but none of us is clamoring for the purpose of a free right of way, for instance, for any American Railroad that carries freight. We cheerfully spend millions of dollars on the Lime Kiln crossing and the Livingstone Channel to promote shipping on the great lakes, and many more millions for locks at Sault Ste. Marie. And we take pictures of these waterways improvements and put them on postcards which we proudly send to our friends. But I wonder what would happen to the statesman who would suggest that we appropriate funds from the public treasury to break down heavy grades on some of our railroads so that they could haul freight at less expense. As far as public aid is concerned, I can see no difference between the man who invests in ships and the man who invests in railroads."

LABOR.

Service Annuity System Established on El Paso and Southwestern.—The El Paso and Southwestern Railway established on June 1st, a service annuity system applicable to all employes who have been continuously in the service of the Company during fifteen years or more preceding the date of their retirement and who at that date, shall have reached the age of sixty-five years.

The Board of Service Annuities, which has been organized under this system, also has the power at its discretion, to retire a man who has become so incapacitated for the performance of the service for which he was engaged that he cannot be transferred to other work provided, he shall have been continuously in the service of the company during the fifteen years or more next preceding the date of his retirement.

In computing the annuity, an allowance for each year of service is made of one and one-half per cent of the average regular monthly pay for the ten years next preceding retirement. Thus, if an employe has been in the service for forty years, and his average salary or wages for the last ten years was seventy-five dollars per month, his annuity allowance would be sixty per cent of seventy-five dollars or forty-five dollars per month. It is further provided however, that in no case shall the allowance be less than twenty dollars per month or more than one hundred and fifty dollars. These allowances shall be paid monthly during the life of the beneficiary.

Organized Labor in the Railway Field.—The New York "Annalist" points to the fact that there are ten principal divisions of the army of organized labor that forms the human part of the vast and intricate machinery of transportation. They are like ten States bound together by no other tie than a community of interest—a loosely knit republic of labor. Their growth has more than kept pace with that of the powers they serve. Each order, brotherhood, or union began in a very small way—with a mere handful of unsatisfied men. Each has suffered many vicissitudes, and each has risen to its present power by relatively similar methods. A favorite one has been the employment of paid organizers.

About half of all the employes of the railroads belong to one or another of these associations connected with the service. When action seems to them to be necessary, all the members of one or more orders, or brotherhoods, or unions, combine as a unit to enforce their demands. It is this which has made them a force to be reckoned with, even to the passing of special laws by the Congress of the United States.

The membership of these ten great railroad powers fluctuates. Of late years, it has been increasing steadily. Stated in round numbers, it aggregates about 700,000, made up as follows:

Brotherhood of Locomotive Engineers .	75,000
Brotherhood of Railroad Trainmen	130,000
Order of Railway Conductors	55,000
Brotherhood of Locomotive Firemen and Enginemen	75,000
Brotherhood of Railway Clerks	55,000
Brotherhood of Maintenance of Way Employes	50,000
International Association of Machinists	80,000
Order of Railway Telegraphers	45,000
Switchmen's Union	90,000
Brotherhood of Railway Carmen	45,000
Total	700,000

There are about 1,900,000 railroad employes in the United States. Among them are some 300,000 common laborers, and nearly an equal number of men who are divided among a score or so of relatively small organizations, or who belong to none at all.

All but four of the great railway organizations are affiliated with the American Federation of Labor. These four are the Brotherhoods of Locomotive Engineers, Locomotive Firemen and Enginemen, and Railroad Trainmen, and the Order of Railway Conductors, aggregating 335,000. These bodies are made up of highly skilled men. None of these has regularly employed organizers to increase its membership. In fact they remind one somewhat of the ancient guilds of craftsmen in the qualifications they exact on the part of those who would join them. By some they are called the aristocrats of the railroad labor world. Their leaders are men of unusual force and executive ability.

Labor Troubles in Pittsburgh.—A number of the employes of the Westinghouse Electric & Manufacturing Company, and the Westinghouse Machine Company went on a strike recently, because the management refused to recognize the demands made by the newly formed labor union, the Allegheny Congenial Industrial Union, and as a result the works of these companies at East Pittsburgh are partly shut down. The management of the companies does not believe that the trouble will be of long duration.

EQUIPMENT.

Locomotive and Car Purchase by Mobile and Ohio.—The Mobile and Ohio Railroad Company announces the purchase of seven consolidation type freight locomotives, 1,000 all steel ventilated box cars, 8 all steel passenger coaches, 4 all steel mail and baggage cars, and 4 all steel baggage and express cars at a cost of over a million dollars. This equipment will all be of the most modern design as well as of most substantial construction.

Dining Car Equipment of the Southern Pacific.—The Southern Pacific has recently purchased six new dining cars which now gives that Company one hundred and five diners, the largest number owned by any one railroad either at home or abroad. In addition to these 105 diners, the company now possesses forty-two observation cars, in general use on its lines; one lunch car, which, when experimented with, proved a marked success, and two cafe cars. It also operates five restaurants and sixteen boats, on which dining accommodations are to be found, all under the supervision of Allan Pollok, superintendent of dining cars, hotels and restaurants. The Company is rigorous in its demand for the most sanitary conditions and cleanliness on its diner system.

TRAFFIC.

Pennsylvania Railroad Issues New Order with Reference to Mileage Books.—The Pennsylvania Railroad Company has instructed all conductors of passenger trains in detaching mileage from mileage books to notify each passenger the number of miles covered by his journey.

This was done in order to enable the passenger to check up the amount of mileage detached and also to insure accuracy on the part of conductors in detaching the correct amount.

These are the instructions issued to conductors:

"When a mileage ticket is presented for passage, conductor must in every instance (except in sleeping cars on night trains) inquire of passenger his destination and must tell him the place to which lift is made and number of miles required for trip thereto; for instance, to a passenger offering mileage fo a trip from Philadelphia to Williamsport, Philadelphia Division conductor should say to passenger 'Harrisburg, 104 miles.'

"When a mileage ticket is presented, conductor must in every instance (except in sleeping cars on night trains) inquire of holder how many passengers and destination of each; and must repeat such information to passenger, stating the number of miles detached; for instance, if mileage should be offered for two passengers Philadelphia to Williamsport, the Philadelphia Division conductor should say: 'Two to Harrisburg, 208 miles.' In the case of one passenger using a mileage ticket the announcement would be 'One to Harrisburg. 104 miles.'"

In addition to the foregoing instructions, the Company is now commencing a plan whereby passengers in sleeping cars will be notified as to the mileage lifted by means of a slip inserted in the mileage book.

San Francisco Hotel Rates for the Panama Pacific International Exposition.—An announcement of interest to passenger traffic officials, is to the effect that hotel keepers at San Francisco have not only entered into an agreement among themselves, but with the Exposition officers as well, that there will be no increase whatever in the prices which they have submitted to prevail throughout the Exposition year. These rates range from $1.00 to $3.00 per day, European plan, and the agreement extends to the dining rooms and restaurants, so that the visitors may be assured of reasonable prices for the necessities. Many objectionable features will be dispensed with, such as solicitors on trains, steamers and at depots. Buss lines will run from the ferry and depot to all hotels, the fare being twenty-five cents per passenger.

Food Stuffs an Increasing Factor in Import and a Decreasing Factor in Export Trade.—Home consumption of domestic foodstuffs has so nearly overtaken home production that the United States is not only reducing its sales of foodstuffs abroad but drawing more largely upon foreign countries for certain of its food requirements. An analysis of the foreign trade during the first six months under the new tariff has been made by the Bureau of Foreign and Domestic Commerce, Department of Commerce. From this it is shown that imports of foodstuffs in their natural condition, including food animals, increased from $117,194,237 in the half year ended with March, 1913, to $143,421,536 in a like period ended with March, 1914; and that imports of foodstuffs partly or wholly prepared for use in the same period advanced from $95,744,241 to $100,967,378. Thus the increase in importations of all food products in the period named amounted to over $30,000,000 or an average of $5,000,000 per month.

On the export side the figures are even more striking. Of crude foodstuffs the sales to foreign countries fell off more than 50 per cent, while prepared foodstuffs also declined, though in smaller proportion. Exports of the first-named group fell from $115,850,453 in the six months period of last year to $55,483, 787 in the half year which ended with March of the current year, and manufactured food products from $180,007,422 to $162,022,620.

ELECTIONS AND APPOINTMENTS.

Executive.

R. H. Ashton, vice-president, American Railway Association.

John F. Auch, vice-president and traffic manager, Philadelphia & Reading Railway. Headquarters, Philadelphia.

E. C. Bagwell, president's assistant, Seaboard Air Line Ry. Headquarters, Norfolk, Va.

Fred T. Dickerson, assistant to the president, Central of New Jersey. Headquarters, New York.

M. L. Grossman, assistant to president and secretary, Georgia and Florida Railroad. Headquarters, Baltimore, Md.

Samuel L. Kamps, assistant to chief executive officer, Pere Marquette Railroad. Headquarters, Detroit, Mich.

Paul H. King, receiver, Pere Marquette Railroad. Headquarters, Grand Rapids, Mich.

R. J. Lockwood, vice-president, New Iberia & Northern. Headquarters, New Iberia, La.

L. B. Maytag, vice-president, South Dakota Central. Headquarters, Sioux Falls, S. D.

H. U. Mudge, president, American Railway Association.

A. M. Nanton, director, Canadian Pacific Railway Co.

Joseph H. Young, president, Norfolk Southern Railway. Headquarters, Norfolk, Va.

T. U. Young, assistant to the vice-president and general manager, Jonesboro, Lake City & Eastern Railroad. Headquarters, Jonesboro, Ark.

Legal.

C. B. Heiserman, general counsel, Pennsylvania Lines West of Pittsburgh. Headquarters, Pittsburgh, Pa.

E. H. Seneff, general solicitor, Pennsylvania Lines West of Pittsburgh. Headquarters, Chicago, Ill.

Financial.

K. Bowerfind, general paymaster, Missouri, Kansas and Texas Railway. Headquarters, Dallas, Texas.

Albert T. Clifton, secretary and treasurer, Texas Central Railroad. Headquarters, Waco, Texas.

T. Garland Tinsley, treasurer, Georgia & Florida Railroad. Headquarters, Baltimore, Md.

Accounting.

F. W. Charske, auditor, freight accounts, Union Pacific. Headquarters, Omaha, Neb.

S. W. Greaves, accountant of freight and passenger charges, St. Louis Southwestern Railway. Headquarters, St. Louis, Mo.

Thomas C. McCampbell, general auditor and claim agent, Tennessee, Kentucky & Northern. Headquarters, Nashville, Tenn.

Charlton Messick, assistant general auditor, St. Louis Southwestern Railway. Headquarters, St. Louis, Mo.

Engineering and Mechanical.

H. E. Astley, division engineer, Central New England Division, New York, New Haven & Hartford Railroad. Headquarters, Hartford, Conn.

O. S. Bowen, assistant chief engineer, Great Northern Ry. Headquarters, Spokane, Wash.

I. C. Bower, assistant engineer, Chicago, St. Paul, Minneapolis and Omaha Railroad. Headquarters, St. Paul, Minn.

J. S. Browne, assistant engineer of maintenance of way, New York, New Haven and Hartford Railroad. Headquarters, New Haven, Conn.

J. J. Carey, master mechanic, Texas and Pacific Railway. Headquarters, Marshall, Texas.

M. C. Cleveland, valuation engineer, Lehigh Valley Railroad. Headquarters, New York.

P. J. Colligan, master mechanic, Illinois and Chicago Terminal divisions, Rock Island Lines. Headquarters, Chicago, Ill.

E. L. Cruger, assistant engineer, Illinois Central Railroad. Headquarters, Chicago, Ill.

W. H. Davis, master mechanic, Marshall and East Texas Railroad. Headquarters, Marshall, Texas.

C. O. Destiche, superintendent of motive power, South Dakota Central. Headquarters, Sioux Falls, S. D.

John Dickson, general master mechanic, Spokane & Inland Empire Railroad. Headquarters, Portland, Ore.

R. J. Greiner, general foreman, Missouri, Kansas & Texas Lines. Headquarters, Smithville, Texas.

Otto Gumpper, assistant engineer, Southern Railway. Headquarters, Birmingham, Ala.

A. H. Hogeland, chief engineer, Great Northern. Headquarters, St. Paul, Minn.

J. W. Hungate, electrical superintendent, Spokane and Inland Empire. Headquarters, Spokane, Wash.

Ernest Kuehn, inspector of motor cars, St. Louis Southwestern System. Headquarters, Texarkana, Ark.

W. T. Kuhn, superintendent of motive power, Toronto, Hamilton and Buffalo. Headquarters, Hamilton, Ont.

W. T. Lovell, master mechanic, Oregon-Washington Railroad and Navigation Company. Headquarters, Portland, Oregon.

J. T. Luscombe, master mechanic, Ohio River Division, Baltimore and Ohio Railroad. Headquarters, Parkersburg, W. Va.

D. H. Maples, superintendent of building construction, Canadian Pacific Railway. Headquarters, Montreal, Que.

L. A. Richardson, mechanical superintendent, First District, Rock Island Lines. Headquarters, Des Moines, Iowa.

R. E. Rowe, master mechanic, St. Louis, Brownsville and Mexico Railroad. Headquarters, Klingsville, Texas.

Harvey Shoemaker, mechanical superintendent, Bangor and Aroostook Railroad. Headquarters, Derby, Maine.

O. E. Slater, superintendent of terminals, Fort Dodge, Des Moines and Southern Railroad. Headquarters, Fort Dodge, Iowa.

W. T. Spencer, division engineer maintenance of way, Providence Division, New York, New Haven and Hartford Railroad. Headquarters, Providence, R. I.

Paul Sterling, division engineer, Western Division, New York, New Haven and Hartford Railroad. Headquarters, Waterbury, Conn.

R. L. Stewart, mechanical superintendent, Third District, Chicago, Rock Island and Pacific Railroad. Headquarters, El Reno, Okla.

E. Von Sprecken, assistant engineer, Atlantic Coast Line Railroad. Headquarters, Savannah, Ga.

Walter Walker, foreman, bridge and building department, South Dakota Central. Headquarters, Sioux Falls, S. D.

W. D. Warren, division engineer, Midland Division, New York, New Haven and Hartford Railroad. Headquarters, Hartford, Conn.

H. E. Waters, supervisor of division No. 6, Pennsylvania Railroad. Headquarters, Mifflin, Pa.

W. B. Wilson, master mechanic, Chicago, Rock Island and Pacific Railroad. Headquarters, Dalhart, Texas.

Operation.

H. H. Broughton, assistant superintendent, Cleveland Division, Baltimore and Ohio. Headquarters, Canal Dover, Ohio.

A. V. Brown, general superintendent, Central District, Northern Pacific Railroad. Headquarters, Livingston, Mont.

C. E. Burchfield, trainmaster, east end, Knoxville Division, Southern Railway.

A. E. Campbell, superintendent, Columbia Division, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Malden, Wash.

C. B. Carpenter, assistant superintendent, Fourth Division, Denver and Rio Grande Railroad. Headquarters, Alamosa, Colo.

E. W. Deuel, superintendent, Third Division, Denver and Rio Grande Railroad. Headquarters, Gunnison, Colo.

R. D. Fitzmaurice, superintendent, Providence Division, New York, New Haven & Hartford Railroad. Headquarters, Providence, R. I.

E. D. Flad, assistant supervisor of Division No. 32, Pennsylvania Railroad. Headquarters, Earnest, Pa.

W. H. Foster, superintendent, New York Division, New York, New Haven & Hartford Railroad. Headquarters, Harlem River, N. Y.

E. W. Fowler, inspector of transportation, Chicago Great Western Railroad. Headquarters, Chicago, Ill.

George H. Frazine, master carpenter, Cleveland carpenter department. Lake Shore and Michigan Southern Railway and Dunkirk, Allegheny Valley and Pittsburgh R. R. Headquarters, Cleveland, Ohio.

J. D. Gallary, superintendent, Shore Line Division, New York, New Haven & Hartford Railroad. Headquarters, New Haven, Conn.

R. A. Grammes, terminal trainmaster, Baltimore and Ohio Railroad. Headquarters, Philadelphia, Pa.

R. J. Greiner, general foreman, Missouri, Kansas & Texas. Headquarters, Smithville, Texas.

S. P. Henderson, superintendent, Southern Division, Chicago and Alton Railroad. Headquarters, Bloomington, Ill.

Paul Hevener, superintendent, Insurance Department, Rock Island Lines.

W. C. Hudson, superintendent, Washington Division, Southern Railway. Headquarters, Alexandria, Va.

J. H. Jackson, superintendent, Newark Division, Baltimore and Ohio Railroad. Headquarters, Newark, Ohio.

C. G. Johnson, supervisor of efficiency, Minneapolis, St. Paul and Sault Ste. Marie Railroad. Headquarters, Minneapolis, Minn.

A. B. Kearsey, general manager, Pascagoula Moss Point Northern R. R. Headquarters, Moss Point, Miss.

D. F. Kirkland, general manager, Georgia and Florida.

E. E. Lillie, superintendent, Traction Division, Spokane and Inland Empire Railroad. Headquarters, Spokane, Wash.

J. T. Loree, superintendent, Susquehanna Division, Delaware and Hudson Railroad. Headquarters, Oneonta, N. Y.

M. D. Miller, superintendent, Western Division, New York, New Haven & Hartford Railroad. Headquarters, Waterbury, Conn.

Harry D. Mudgett, trainmaster, Northern Pacific. Headquarters, Livingston, Mont.

J. H. Nelson, terminal trainmaster, Pere Marquette R. R. Headquarters, Detroit, Mich.

J. C. Nolan, superintendent, St. Louis, Brownsville & Mexico Railroad. Headquarters, Kingsville, Texas.

Ralph Peebles, general manager, Tavares & Gulf Railroad. Headquarters, Tavares, Fla.

G. V. Peyton, superintendent, Columbia Division, Southern Railway. Headquarters, Columbia, S. C.

A. B. Ramsdell, superintendent, Illinois Division, Chicago, Rock Island and Pacific. Headquarters, Rock Island, Ill.

J. W. Root, assistant superintendent, Wheeling Division, Baltimore and Ohio Railroad. Headquarters, Benwood, W. Va.

G. W. Rourke, assistant general manager, Second District, Chicago, Rock Island and Pacific. Headquarters, Topeka, Kansas.

Mott Sawyer, superintendent, Idaho Division, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Spokane, Wash.

S. G. Strickland, general manager, Chicago & North Western Railway. Headquarters, Chicago, Ill.

R. C. Ten Eyck, superintendent, Grand River Division, Denver and Rio Grande Railroad. Headquarters, Helper, Utah.

W. J. Towne, assistant general manager, Chicago & North Western Ry. Headquarters, Chicago, Ill.

G. B. Vilas, general superintendent, Chicago & North Western Ry. Headquarters, Chicago, Ill.

P. G. Walton, superintendent, North Carolina Division, Seaboard Air Line Railway. Headquarters, Hamlet, N. C.

J. B. White, assistant trainmaster, Baltimore and Ohio. Headquarters, Brunswick, Md.

F. F. Whittlesey, acting general manager, Tennessee Railway. Headquarters, Oneida, Tenn.

L. B. Wickersham, assistant general manager, Oregon Electric Ry., Spokane and Inland Empire Railroad and the United Railways Co. Headquarters, Portland, Oregon.

Traffic.

G. E. Allen, division passenger agent, Mobile and Ohio Railroad. Headquarters, Jackson, Tenn.

H. S. Bradley, traffic manager, freight and passenger traffic, Ann Arbor Railroad. Headquarters, Toledo, Ohio.

Charles A. Brister, traffic manager, Cleveland, Cincinnati, Chicago and St. Louis Ry. Headquarters, Cincinnati, Ohio.

A. J. Brouthers, traveling passenger agent, Chicago, Milwaukee and St. Paul Railway. Headquarters, New York City.

F. W. Buddard, agent, Baltimore and Ohio Railroad. Headquarters, Bridgeport, W. Va.

H. C. Bush, member, Committee on Uniform Classification. Headquarters, Chicago, Ill.

C. J. Buster, general traffic manager, Big Four Railroad.

Willis Callaway, Florida agent, Atlanta, Birmingham and Atlantic. Headquarters, Jacksonville, Fla.

C. A. Carpenter, assistant general freight agent, Seaboard Air Line Railway. Headquarters, Jacksonville, Fla.

J. C. Carpenter, agent, Baltimore and Ohio Railroad. Headquarters, Jane Lew, W. Va.

A. S. Collins, general dairy agent, Rock Island Lines. Headquarters, Cedar Rapids, Iowa.

C. T. Cope, assistant commercial agent, Southern Railway. Headquarters, Rome, Ga.

Xerxes H. Cornell, master of transportation, Chicago and Alton Railroad. Headquarters, Bloomington, Ill.

F. K. Crosby, chief of tariff bureau, Chicago, Rock Island and Pacific. Headquarters, Chicago, Ill.

W. B. Harris, general agent, Western Express Company. Headquarters, Chicago, Ill.

M. Hartmann, general Western agent, United Fruit Company. Headquarters, Chicago, Ill.

C. E. Holland, agent, Baltimore and Ohio Railroad. Headquarters, Huron, Ind.

W. N. Kee, ticket agent, Chicago, Milwaukee and St. Paul Ry. Headquarters, New York.

J. C. LaCoste, assistant general freight agent, Chicago, Rock Island and Pacific Railroad. Headquarters, Kansas City, Mo.

C. B. Lindsay, commercial freight agent, Denver and Rio Grande and Western Pacific Railroads. Headquarters, Pine Bluff, Ark.

John McAuliffe, Jr., foreign freight agent, New York Central and Hudson River Railroad. Headquarters, New York.

P. H. McCue, agent, Baltimore and Ohio Railroad. Headquarters, Cranberry, W. Va.

E. F. McDaneld, general agent, freight department, Chicago and Alton Railroad. Headquarters, Salt Lake City, Utah.

J. J. McManus, assistant freight claim agent, Northern Pacific Railway. Headquarters, Tacoma, Wash.

B. S. Merritt, general agent, Great Northern Railroad. Headquarters, Great Falls, Mont.

H. R. Mitchell, commercial agent, Great Northern Railroad. Headquarters, Kansas City, Mo.

R. C. Moore, agent, Baltimore and Ohio Railroad. Headquarters, Georgia, Ind.

H. A. Platt, traveling freight agent, Southern Railway. Headquarters, Rome, Ga.

E. S. Reader, general agent, Western Pacific Railway, Denver and Rio Grande Railroad and Missouri Pacific-Iron Mountain System. Headquarters, Reno, Nev.

H. F. Sanborn, general agent, freight department, Great Northern Railway. Headquarters, St. Paul, Minn.

W. A. Shropshire, general agent, Western Maryland Ry. Headquarters, Baltimore, Md.

T. P. Smith, Jr., agent, Baltimore and Ohio Railroad. Headquarters, Joppa, Md.

Bryan Snyder, traffic manager, New Iberia & Northern Railroad. Headquarters, New Iberia, La.

R. E. Tipton, general freight and passenger agent, Galveston, Houston and Texas. Headquarters, Smithville, Texas.

F. E. Water, traveling freight agent, Atlanta, Birmingham & Atlantic Railroad. Headquarters, Atlanta, Ga.

Herman Weigh, general tourist agent, White Pass & Yukon Railroad. Headquarters, Chicago, Ill.

W. S. Wilson, agent, Baltimore and Ohio Railroad. Headquarters, Farmingdale, Ill.

Purchasing.

W. R. Dawson, storekeeper, Cincinnati, Hamilton and Dayton Railway. Headquarters, Dayton, Ohio.

Miscellaneous.

William C. Edes, chairman, Alaska Railroad Commission.

Dr. J. J. McGarrell, medical examiner, Baltimore and Ohio Railroad. Headquarters, Lorain, Ohio.

Frederick Mears, member, Alaska Railroad Commission.

Thomas Riggs, Jr., member, Alaska Railroad Commission.

Robert C. Wood, member, New York State Public Service Commission, First District. Headquarters, New York.

RESIGNATIONS.

Executive.

Benjamin Campbell, vice-president, Boston & Maine Railroad.

S. M. Felton, receiver, Pere Marquette Railroad.

Charles H. Hix, president and general manager, Norfolk Southern Railroad.

Legal.

William S. Kies, general counsel, Chicago & Western Indiana Railroad.

Accounting.

W. H. Anderson, auditor, freight accounts, Union Pacific Railroad.

Engineering and Mechanical.

Max Chase, general foreman, Missouri, Kansas & Texas Lines.

Edward C. Carter, chief engineer, Chicago & North Western Railroad.

J. F. Dunn, superintendent of motive power and machinery, Oregon Short Line.

James Healy, master mechanic, Oregon-Washington Railroad and Navigation Company.

G. H. Langton, master mechanic, Texas and Pacific Railroad.

H. J. Osborne, superintendent of motive power, South Dakota Central Railroad.

R. O. Prendergrast, mechanical superintendent, Bangor and Aroostook Railroad.

A. K. Shurtleff, office engineer, Chicago, Rock Island and Pacific Railroad.

H. C. Van Buskirk, mechanical superintendent, First District, Rock Island Lines.

Operation.

W. D. Cantillon, general manager, Chicago & North Western Ry.

C. A. Carpenter, general manager, Tavares & Gulf Railroad.

Xerxes H. Cornell, superintendent of transportation, Pere Marquette Railroad.

F. C. Farr, superintendent, Traction Division, Spokane and Inland Empire Railroad.

W. A. Gore, superintendent, North Carolina Division, Seaboard Air Line Railroad.

C. W. Miller, superintendent, Southern division, Chicago and Alton Railroad.

C. H. Motsett, superintendent, New York Division, New York, New Haven and Hartford Railroad.

J. H. Nelson, superintendent of transportation, Florida East Coast Railroad.

J. H. Rosenstock, superintendent, Susquehanna Division, Delaware and Hudson Railroad.

Stewart Starr, general manager, Moss Point Northern Railroad.

N. A. Williams, superintendent, Grand River Division, Denver and Rio Grande Railroad.

Traffic.

Joseph H. Banks, traveling freight agent, Atlanta, Birmingham and Atlantic Railroad.

S. S. Butler, traffic manager, New Iberia and Northern Railroad.

John J. Kirby, general passenger agent, Ann Arbor Railroad.

W. F. McClure, general freight and passenger agent, Galveston, Houston and Henderson Railroad.

H. E. Partridge, Jr., Florida agent, Atlanta, Birmingham and Atlantic Railroad.

H. W. Prickett, general agent of the freight department, Chicago and Alton Railroad.

Fred Smith, assistant general freight agent, Chicago, Rock Island and Pacific Railroad.

R. M. Smith, general agent, freight department, Great Northern Railroad.

J. C. Toynbee, commercial agent, St. Louis Southwestern Railway.

H. E. Williams, general agent, Western Maryland Railroad.

Miscellaneous.

D. R. McLennan, supervisor of insurance fund, Rock Island Lines.

OBITUARY.

Frank Lynn Borton, western superintendent of the Star Union Line at Chicago, died at his home in Evanston, Ill., on June 2nd. Mr. Borton was born on February 23, 1863, near Philadelphia, Pa., and was educated at Westown Boarding School. He began railway work in February, 1881, as a clerk in the motive power department of the Columbus, Chicago & Indiana Central at Columbus, Ohio. He was then to April, 1888, stenographer to the western manager of the Star Union Line. From 1888, to July, 1896, he was chief clerk to the western superintendent at Chicago, then chief clerk to the manager and the western superintendent, and since January 1, 1907, had been western superintendent of the same line, with headquarters at Chicago.

Jacob O. Brinkerhoff, superintendent of the Kansas Division of the Union Pacific at Kansas City, died in that city on May 22nd. He was born on March 3, 1839, in Tioga County, N. Y., and began railway work in May, 1865, as a brakeman on the Union Pacific Railway. He was then consecutively baggageman, freight and passenger conductor and local despatcher at Kansas City, Mo., until July, 1877, when he was appointed superintendent of the Smoky Hill Division. The following year he was appointed superintendent of the Kaw Valley Division, remaining in that position until November, 1884, when he was appointed superintendent of the Kansas Division. From January 1, 1891, to November, 1898, he was general superintendent, and since that time was superintendent of the same division. Mr. Brinkerhoff's entire service was with the Union Pacific Railway and its successor, the Union Pacific Railroad.

W. H. Brimson, formerly from February, 1904, to September, 1910, general superintendent of the Baltimore & Ohio Southwestern, died recently at his home in Washington, D. C., aged 65 years. Mr. Brimson began railway work in 1862 as messenger boy for the Cleveland and Toledo. Later he was consecutively secretary to superintendent, train despatcher, trainmaster and superintendent telegraph and superintendent of the Cincinnati, Sandusky & Cleveland, and subsequently was superintendent of the Duluth & Iron Range, assistant superintendent of the Northern Pacific, and from 1892 to August, 1895, superintendent of the Rocky Mountain Division of the latter road at Missoula, Mont. From November, 1895, to June, 1896, Mr. Brimson was superintendent of the Brainerd & Northern Minnesota, and in May, 1897, he went to the Baltimore & Ohio Southwestern as division superintendent at Chillicothe, Ohio, which position he held until he was promoted to general superintendent in February, 1904.

D. C. Cheney, fuel inspector of the Chicago, Milwaukee & St. Paul, died at his home in Chicago, on May 29th, aged 60 years. He had been connected with the St. Paul since 1873, beginning as a telegraph operator and filling successively the positions of assistant train despatcher, chief despatcher, trainmaster, division superintendent, general superintendent of the Middle District until 1910, when he was appointed fuel inspector.

Pennel Cherrington, general attorney of the San Pedro, Los Angeles & Salt Lake R. R., died at the Good Samaritan Hospital, Los Angeles, Cal., May 22nd. Mr. Cherrington was getting a glass of water for his little son the previous Monday morning, fell and sustained fatal injuries.

Former **Judge John Forrest Dillon,** consulting counsel of the Western Union Telegraph Company, and formerly general counsel of the Missouri Pacific, died at his home in New York City on May 5th. He was born on December 25, 1831, in Montgomery County, N. Y., and was appointed general counsel of the Union Pacific in 1879, which position he held for many years. He also became general counsel for the Missouri Pacific and the Texas & Pacific and consulting counsel for the Manhattan Elevated Railway Company of New York City. Previous to taking up railway work he served for many years on the bench and was the author of numerous legal works.

J. Roy Dillon, president of the Texas City Terminal Company, with headquarters at Texas City, Tex., died at Mineral Wells, Tex., on May 18th.

Walter J. Eddington, general foreman of the Atchison, Topeka & Santa Fe Ry., at Corwith, Ill., died at his home in Chicago, May 29th, aged 65 years.

Martin Luther Gardner, assistant to the principal assistant engineer of the New Jersey Division of the Pennsylvania Railroad, with headquarters at New York, died on May 14th at his home in Newark, N. J., at the age of 51.

Henry W. Gays, general manager of the Ottawa & New York Railway, died at Ottawa, Ont., May 31st. He was born at Brant, N. Y., March 21, 1849. Previous to his connection with the Ottawa & New York Railway, Mr. Gays was general manager of the St. Louis, Chicago & St. Paul Railway, and the Chicago, Peoria & St. Louis Railway.

Thomas R. Limer, superintendent of transportation of the Hocking Valley, with headquarters at Columbus, Ohio, died on May 19th, aged 50 years. Mr. Limer had been in railway service since December, 1886, and had been connected with the Columbus, Hocking Valley & Toledo and its successor, the Hocking Valley, since March, 1890. He was consecutively chief clerk in charge of the car record office, car service agent, superintendent of car service and superintendent of transportation, having held the latter position four years.

A. A. Sinclair, superintendent of bridges and buildings of the Duluth, Missabe & Northern Railway, was run down by an engine in the proctor yards near Duluth, Minn., May 14th. He was taken to a Duluth hospital, but died within a short time.

J. B. Smalley, assistant general manager of the Second District of the Chicago, Rock Island & Pacific, with headquarters at Topeka, Kan., died in the latter city on May 8th. His death was due to a stroke of paralysis, brought on, it is said by strain caused by hours of work without sleep in the flood district of the Cimarron Valley, in Western Kansas. He suffered the attack on May 6th while superintending the reconstruction of washed out bridges. Mr. Smalley has been in railway service about 40 years.

Sir William Whyte, a director and formerly vice-president of the Canadian Pacific Railway, died at Coronado Beach, Cal., April 14th. Sir William Whyte was born in Fifeshire, Scotland, on September 15, 1843. He was educated in Scotland, and in May, 1862, commenced railway work as a station agent on the West of Fife Railway. He came to Canada in June, 1863, and secured a position on the Grand Trunk Railway, for which company he worked for twenty years. He was freight agent at Toronto for a time and was for over one year division superintendent. From 1883 to 1884 he was general superintendent of the Credit Valley Railway, and also served in that position with the Ontario & Quebec Railway, which also included the Credit Valley and Toronto, Grey & Bruce Railways. In 1884-1885 he became general superintendent of the Ontario Division of the Canadian Pacific Railway, which embraced all the lines in Ontario west of Smith Falls Junction. The following years he was general superintendent of the Eastern Division as well as the Ontario Division, and from 1886 to 1897 he served as general superintendent of the Western Division. It was in 1897 that he was appointed manager of the Western Lines, including all lines west of Lake Superior, and occupied this position until 1901, when he became assistant to the president. This position he filled for three years, and on January 1, 1904, was elected second vice-president, with headquarters at Winnipeg, which position he filled up to a little over two years ago, when he retired from active service, although continuing as a director of the company.

William Wainwright.

WILLIAM WAINWRIGHT, vice-president of the Grand Trunk and Grand Trunk Pacific, died on May 14th, at Atlantic City, New Jersey, at the age of seventy-four.

He was born at Manchester, England, April 30, 1840, and entered railway service there in 1858, with the Manchester, Sheffield and Lincolnshire Railway, beginning as junior clerk and passing through various positions until he became general manager. He became associated with the Grand Trunk Railway in 1862 as senior clerk in the chief accountant's office and from 1863 to 1867, was secretary to the managing director and until 1872, senior clerk to the managing director in charge of car mileage department. He became general passenger agent in 1872 and in 1881, was appointed to the position of assistant manager. In 1890, he was appointed assistant general manager and in 1896 became general manager. From 1900 to 1907, he was comptroller and in July of the latter year, was elected fourth vice-president. In 1890, he became second vice-president of the Grand Trunk Railway and the Grand Trunk Pacific Railway and later when the numerical designations of the vice-presidents were abolished, he was appointed vice-president with seniority over other vice-presidents. Shortly after the death of President C. M. Hays, who it will be remembered lost his life in the Titanic disaster, Mr. Wainwright was placed in charge of all the company's affairs pending the appointment of a president to which position he was the logical successor had it not been for his advanced years. His railroad record extended over a period of fifty-six years.

DIVIDEND NOTICES.

Office of The United Gas Improvement Co.

N. W. corner Broad and Arch Streets.

Philadelphia, June 10, 1914.

The Directors have this day declared a quarterly dividend of two per cent ($1.00 per share), payable July 15, 1914, to stockholders of record at the close of business June 30, 1914. Checks will be mailed.

LEWIS LILLIE, Treasurer.

THE NORTHERN CENTRAL RY. CO.

Baltimore, June 9, 1914.

The Board of Directors has this day declared a semi-annual dividend of four per cent ($2 per share) upon the Capital Stock, payable on and after July 15, 1914, to stockholders as registered June 30, 1914. Checks will be mailed to stockholders who have filed permanent dividend orders.

JAMES F. FAHNESTOCK, Treasurer.

Railway World

VOL. LVIII. JULY, 1914 No. 7

Important Developments in the Transportation Field

RAILWAY MAIL PAY DEVELOPMENTS

The callousness of the Post Office Department and Congress toward the rights of the carriers in connection with proper compensation for carrying the mails continues to astonish the country. Attention was called in last month's issue to the statement of Mr. Ralph Peters, chairman of the Committee on Railway Mail Pay with regard to the Moon bill which, if passed, would not only fail to provide for the enormous additional burden placed upon the railways by the parcel post, but would actually reduce the inadequate payments now being made, by about $10,000,000 annually.

In reply to Mr. Peters' statement, Congressman Moon, who, by the way, is chairman of the Post Office Committee of the House of Representatives, attempts to defend his bill by stating that he does not believe it will produce a loss to the railroads of $10,000,000 a year in addition to the loss they have already suffered. He also asserts that the introduction of his bill was delayed as long as possible and that a policy of delay has been practiced by the railroads for sixteen years. Both these assertions, the carriers flatly deny. In the first place, the determination of what the railways would lose under the Moon bill is, as Mr. Peters points out, a question of fact, impossible of determination except by technical experts, and no body can better judge of that fact than the Joint Congressional Committee which will soon submit its report for the consideration of Congress. As to the policy of delay to which Congressman Moon refers, the fact is that the railroads have been seeking by every proper means, during the past twenty-five years to obtain from Congress fair treatment on this subject. To quote from a second statement published by Mr. Peters on June 25th:

"The railway companies have for the last eighteen months been urging the Postmaster-General to no longer delay giving attention to adequately compensating them for carrying the increased burden of the parcel post. They have, indeed, brought to public attention every reason that they could suggest why Congress should indefinitely delay any action to give them less than their services are worth.

"Congressman Moon further asserts that 'the only material difference between the Joint Congressional Committee and the Committee of Congressman Moon is that the Commission proposes a higher rate than the Committee.' The fact is that the Commission has not yet reported its recommendations, and that the rates of pay proposed by Congressman Moon's bill are absolutely confiscatory.

"We are in full accord with the conclusions of Chairman Moon that the old method of weighing the mails **once in four years** is altogether unfair, unscientific and unbusinesslike. We have urged for many years that the mails should be weighed every year for the whole country and the pay adjusted accordingly. The claim is also unfounded that the railroads divert the mails so as to pad them when the regular weighing is in progress. The railroads have no control over the movement of the mails; the routing is all done by the officers of the Post Office Department. The Department officers will readily verify this statement.

"The railroads are prepared to abide by the conclusions of the Joint Congressional Committee upon the fact as to whether or not they are now overpaid. They are also eager to co-operate with the government in arriving at a policy to govern future methods of payment which shall protect the government, and at the same time secure to the railroads that pay to which they are justly entitled."

How this attitude of Congressman Moon and the Post Office Departemnt is viewed by ex-Senator Jonathan Bourne, Jr., chairman of the Joint Congressional Committee on Railway Mail Pay, is shown in the following statement which he made public on July 9th:

"In its persistent efforts to secure dictatorial power the Post Office Department has broken all records. The Department Bill, H. R. 17042, provides that 'not exceeding' certain rates shall be paid to steam railroads for transportation of the mail. The same bill also contains a clause compelling the railroads to carry mail.

"It is claimed that 'not exceeding' is but a continuance of existing law, but heretofore the railroads have not been compelled by law to carry mail. They are supposed to have accepted the rates as a voluntary act which in itself was assumed to be sufficient guarantee that rates will not be too low and it was only necessary for Congress to fix maximum rates. But this assumption was not sound as a railroad would hardly dare to refuse to carry mail because of irritation resultant from such action in the community in which the road operates.

"The Interstate Commerce Commission is now authorized to fix maximum freight rates, it being left to the railroads to fix the minimum. It would be considered preposterous that the Commission should fix the maximum rates at which railroads must carry freight and leave the shippers to fix the minimum. Yet this is the very thing that the Post Office Department proposes for mail pay in the Departmental Bill. Congress is to fix the maximum rates and the shipper—the Post Office Department—is to fix the minimum rates, and the railroads are to be compelled to carry the mail. This is a proposition without parallel in the history of rate regulation. It is Bureaucracy run mad."

Such a statement by Senator Bourne constitutes a most impressive warning against the tendency displayed by the present Administration to unfairly interfere with railway activities and in fact, to openly rob the carriers simply because, at the present time, they apparently have the power to do so. Undoubtedly Senator Bourne would have hesitated to censure the Post Office Department so severely unless he felt that the railways were being subjected to treatment of an unusually unfair character, and it can be confidently stated that no man in public life knows more, at the present time, what the requirements of the mail service really are and what the measure of compensation should be for transporting the mails. Senator Bourne and his committee, will find the country solidly behind them in their desire to give the carriers a square deal. The efforts of the Post Office Department and Congressman Moon to offset the constructive results of an investigation of this character, is little short of contemptible, and is doomed to defeat. In another statement issued on June 27th, Senator Bourne refers, in more detail, to the Moon bill and to the various investigations by the Post Office Department in connection with railway mail pay, as follows:

"In its insistent efforts to reduce railway mail pay, the Post Office Department has attempted to dictate to Congress rates which, if adopted, would be confiscatory.

"House Bill, 17042, introduced by Mr. Moon, Chairman of the House Committee on Post Office and Post Roads, was, I am informed, prepared by officials of the Post Office Department and introduced by Mr. Moon at the request of the Postmaster General. Under that bill, the average revenue to the railroads would be less than 21.8 cents for hauling a 60-foot mail car one mile. I assert that this rate is confiscatory. I realize the responsibility of making such an assertion, but its justification lies in the Post Office Department's own figures.

"The Department spent several years in an attempted elaborate investigation of railroad expenses and car space. It propounded over 140 interrogatories to the 796 railroads carrying mail. The railroads spent over $250,000 in securing the information asked for, and it cost the Government $19,500 to compile, tabulate and present such information in what is known as House Document No. 105, 62d Congress, 1st Session. According to Table 7 of that Document the operating expenses and taxes alone amounted to 3.08 mills per mail car foot mile, or 18.48 cents for hauling a 60-foot mail car one mile. This excludes the advertising and other traffic expenses with which the Department claimed the mail should not be burdened. The margin between this 18.48 cents and the less than 21.8 cents allowed in the Departmental Bill, is so small that if similarly unprofitable rates were made on all railroad traffic, the roads must necessarily go into bankruptcy, because there must be a sufficient allowance for capital charges. According to the Statistics of Railways in the United States for 1911 published by the Interstate Commerce Commission, operating expenses and taxes were 72.53 per cent of the operating revenues. At the same ratio, 7 cents instead of the 3.32 cents allowed under the Department rates, would have to be added to the 18.48 cents to allow for capital charges, as the 18.48 cents covers only operating expenses and taxes. In other words, 25.48 cents would have to be paid the railroads for hauling a 60-foot car one mile to yield the railroads from the mail business the average rate of profit now realized on all railroad traffic, both freight and passenger taken together.

"This incident shows the danger of accepting and acting upon the recommendations of the Departments. It also illustrates the necessity for checking the present trend toward the initiation and control of legislation by officers of the administrative branch of government."

Newspaper editors throughout the country are attacking, in an unusually vigorous manner, the glaringly unfair attitude of the Post Office Department. So far as we can learn, the country, as represented by its newspapers, is practically a unit in its opposition to the present attitude of the Post Office Department.

The Providence, R. I., *Journal* of June 19th, for example, remarks that "No schedule that has in it the element of confiscation should be approved by Congress," and significantly adds that, 'The probability is that the Post Office, when all charges are made, is not self-sustained. But there should be no attempt to conceal the exact condition of the Department. If there is a deficit the people should know all about it. It is improper to make a better showing than the facts warrant by compelling the railroads to handle the mail at a heavy loss; in fact, such a procedure is palpably dishonest."

The Wilmington, N. C., *Star* in an editorial of June 19th affirms that "This Government of ours is too great and too powerful to saddle the expense of an extra public service on the carriers without expecting to pay its way," and the Atlanta, Ga., *Constitution* of June 20th, following the same line of reasoning affirms that, "The Government cannot afford to take service for nothing even from a railroad. That savors too much of confiscation. Even the railroads are entitled to a square deal."

The Chicago *Tribune* of June 18th affirms that the railroads should be paid not only for the cost of the service they give, but should be allowed a fair profit, and adds that the American people want a square deal for all. In the eyes of the Savannah, Ga., *News* of June 22d, "It looks a little as if the Post Office Department was bent on making it appear that the Department is self-sustaining, even if, in order to do so, it has to be unjust to the railroads."

The Fall River, Mass., *Herald* declares that the railroads are making out a strong case which is getting the general endorsement of the press, and the Jackson, Mich., *Patriot* affirms that the Government should set the example of being honest and fair with all its people and that it is not, is evidence of the low tone of morals prevailing among the politicians who run the Government."

Quotations along similar lines could be quoted almost indefinitely as newspaper editors generally have taken up the cause of the railways in this particular. The following editorial, however, from the New York *Sun* of June 23d, sums up the situation so well that it has been found desirable to quote it in full:

"That the railroads of this country are underpaid by from $10,000,000 to $15,000,000 a year for transporting the mails is the conclusion reached, after careful study, by men of such opposed interests as Ralph Peters, President of the Long Island Railroad, and Robert A. Turner, Secretary of the Joint Congressional Committee on Second Class Mail Matter and Compensation for Transportation of Mails. M. O. Lorenz, Associate Statistician of the Interstate Commerce Commission, 'thinks the evidence indicates an underpayment of at least ten per cent,' and recommends a further test of the figures.

"Louis D. Brandeis, who to put it mildly, is not overgenerous to the carrier corporations, finds that **'it seems clear that the railway mail service is at present unremunerative to them.'**

"This condition of underpayment was recognized before the parcel post came into being. Imposing that burden on the railroads without payment for it made the situation more unfair. The railroads complained and Congress, acknowledging the justice of their demand for readjustment, appointed, more than a year ago, the joint committee mentioned above, of which Senator Bourne was made chairman, with Senators Bankhead and Weeks and Representatives Lloyd, Richardson and Tuttle as his associates. This Committee undertook an exhaustive study of the subject, planning to devise a scheme of payment fair to the carriers and the Government and elastic enough to accommodate any changes in the service occasioned by future growth and development.

"Since then Senator Bourne and Representative Richardson have been retired from the Congress, but because of the importance of the matter intrusted to them they have served without pay on the committee. Its researches have been careful and the expectation of Congress and the railroads was that its report and recommendations would furnish a sound basis for intelligent legislation on an intricate and highly technical subject.

"But while this reasonable and proper method of correcting the inequalities which mark one detail of the Government's dealing with the railroads was engrossing the attention of those interested in the subject the Post Office Department has had another idea, which came to general knowledge, when, at midnight on the evening of the day preceding that on which the joint committee's bill was to have been introduced, Chairman Bourne was informed over the telephone that Postmaster General Burleson 'insisted' that Chairman Moon, of the House Committee on Post Offices and Post Roads, should introduce a bill of his own and that this should be 'recognized as the Administration bill.'

"By this proceeding, wholly unexpected by the joint committee, the labors of that body and the special knowledge obtained by it were ignored; **its recommendations were discarded, and the time and effort it had expended were lost. Why were these sacrifices made?** An examination of the committee's bill and of the Moon measure throws light on what might otherwise be a mystery.

"The joint committee's bill is confined to railway mail pay, and provides for line rates one cent a mile higher than the Moon bill. The Moon bill also makes the terminal allowances about 25 per cent lower than the committee bill. Here comparisons must stop, because the committee bill deals with nothing else; here the popular appeal of the Moon bill lies, in the opinion of its authors, because it 'hits the roads again,' and here is the colored gentleman in the woodpile:

"The Moon bill requires that all assistant postmasters, including those now in the classified service, shall take a civil service examination within ninety days. These assistants are mostly officers who have held their jobs because they were competent; those jobs are wanted by hungry Democrats; under the false claim of extending the civil service the Administration will be able to oust some of them and put Democrats in their places.

"In this lies the appeal to the Democrats in Congress; add to it that the Moon bill caters to the anti-railroad prejudice of the country, and a strong combination results. The joint committee offers a fair and reasonable adjustment of rates to be paid for service actually performed by the railroads; the Moon bill joins politics to office grabbing, and the Wilson Administration supports the latter.

"As for the details of the Moon bill so far as they affect the underpayment of the railroads, which offers the excuse for its introduction, **they**

reveal an utter disregard for the rights of the carriers.

"These unfortunates must, under its provisions, provide terminal post offices for handling and distributing the mails, as directed by the Postmaster General.

"They must furnish free transportation to the officers of the Post Office Department and the Postal Service traveling on official business, without regard to whether it concerns the railway mail service; the bill puts the railroads at the mercy of the Postmaster General as to the conveyance of the mails in every detail.

"It provides that 'clerical and other assistance' and office rent for it shall be paid out of the appropriation 'for inland transportation by railway routes.'

"It gives to the Postmaster General power to fix in his discretion payment for carrying all mail matter other than first class, including, of course, the parcel post business.

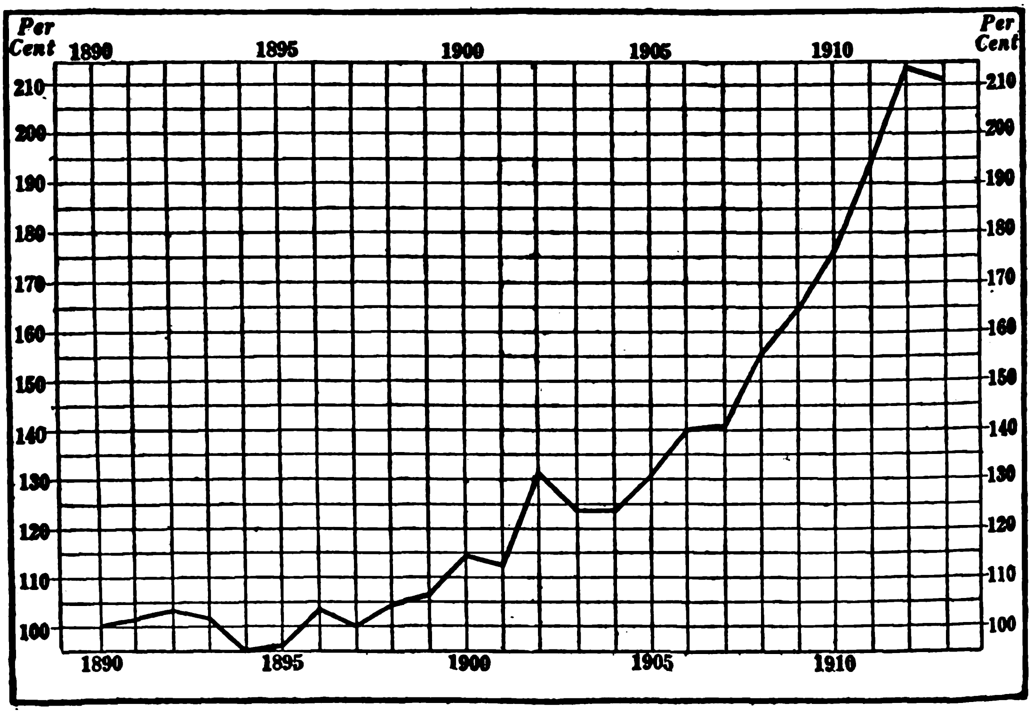
"It betrays in every section whose applicacation makes possible the revelation of such a purpose **a design not to treat the carriers fairly, not to pay just rates for services rendered,** but still further to milk the roads, to force them to do part of the work for nothing, and generally to starve them in their relations with the Government."

"This amazing product of politics and hunger is to be discussed at a hearing tomorrow. It will not be defended as scientific or suitable; its strength will be in partisan playing for jobs and the supposed hatred of a substantial fraction of the public for railroads. The railroads will be represented, to plead for a consideration of the merits of the case, for a study of the joint committee's report, and to test the boasted love of the American people for fair play for all.

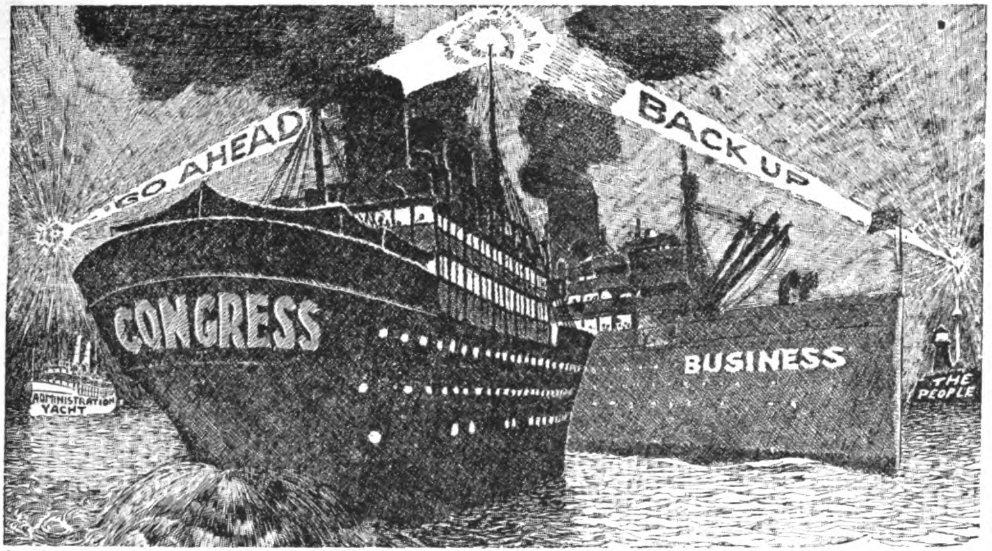
"Are the railroads to get that fair play from any department of the Federal Government?"

The New York *Annalist* adds a most excellent exhibit to the controversy by preparing and publishing the accompanying chart which is plotted on a percentage basis and shows the number of pieces of mail transported by the railroads in the United States per dollar paid them by the Government for that service. As the *Annalist* points out, commencing in 1902, an astonishing growth set in and in the last fiscal year, the railroads were giving more than twice as much service per dollar of cost as in 1890. It would be hard to find better proof, if it were needed that the railroads' claim for more pay is based on substantial grounds. The chart is prepared from official figures.

A Dollar's Worth of Mail Transportation



This chart shows that the railways during the last fiscal year gave twice as much service per dollar of cost in transporting the mails as they gave in 1890.



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A CONFLICT OF SIGNALS

Would it not be better to prevent this collision than to investigate it after it has happened?
—McCay in the New York *American*.

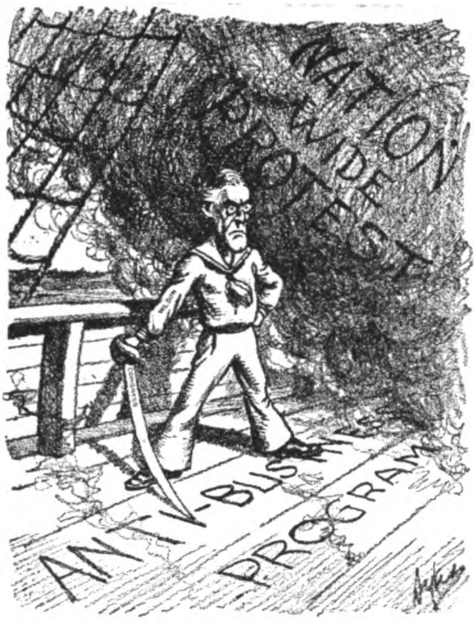
THE FINANCIAL ASPECT OF THE SAFETY MOVEMENT

Safety first stands for the conservation of human life and for that reason alone, it cannot be made too prominent a factor in railway operations. There is another side to the question, however, which gives it a very practical application so far as financial results are concerned. In the first place, hundreds of thousands of dollars worth of equipment has been annually destroyed and enormous quantities of freight ruined by careless methods and habits, the correction of which comes largely under the influence of the greater safety movement now in active operation on practically all important railroads of the country. Second, such methods and habits have not only cost the loss of the services of many valuable men, but have also been the occasion of heavy damage suits which have resulted in the payment by the railroads of hundreds of thousands of dollars to the relatives of the men who have lost their lives and to the men themselves for serious injuries sustained. While it is generally understood that these damages represent no inconsiderable outlay of money, the extent of the loss would be a matter of surprise to those who have not investigated it.

The great majority of these cases for damages are either settled by compromise or through a decision of the lower courts. It is only when the damage claimed, is, in the opinion of railway legal authorities, extremely excessive, that the cases have been carried to the higher courts. It is of interest to note therefore, what action has been taken by these courts in meeting the claims of the injured. Just an even fifty big verdicts have been tested in the highest courts of the various States and the courts have allowed verdicts to stand for $35,000 in four cases, $30,000 in one case, $25,000 in three cases and $20,000 in four cases. These decisions apply to damages allowed railroad men themselves for injuries. Of course, it is different in cases of death. Some of the States allow only $5,000 to the family in case of the death, while others leave the amount to a jury.

But for injuries, railroad companies have paid out $628,883 to employes under the judgments of the highest courts of the land for injuries in fifty cases. These fifty cases are taken from decisions of the various States in which appeals were taken by the railroad companies to the supreme courts on the ground that the verdicts were excessive. Of this sum $325,000 was paid in twelve of the cases. The remaining $303,883 was divided up between thirty-eight other injured railroad men in sums ranging between $1,500 and $17,000.

As a peculiar co-incident nearly all of these holdings were made in the courts of the South and Southwest. Whether or not the courts of that region are more liberal than other courts, or accidents are more



—WHENCE ALL BUT HIM HAD FLED

prevalent in those States is a mere matter of speculation. Texas courts are the crippled railroad man's friend according to the decisions. These courts started off with a judgment for $35,000 for the loss of two legs below the knee by a brakeman, followed this up with $30,000 for another brakeman made a helpless cripple, and followed this up with $20,000 each for three brakemen and one switchman. She gave another switchman $20,000, but the court cut this one down to $15,000. Texas railroads have paid out in these big cases alone $145,000—to six persons.

The other three $35,000 verdicts were paid under judgments affirmed in the supreme courts of Arkansas, Missouri and Idaho. Webster, a brakeman in Arkansas whose injuries consisted of curvature of the spine was paid $35,000. Gordon, a switchman in Missouri received $35,000 for five broken ribs, injured back, pelvis and hip. The Idaho courts compelled the payment of $35,000 to Neil, a freight conductor who was struck by a switch engine.

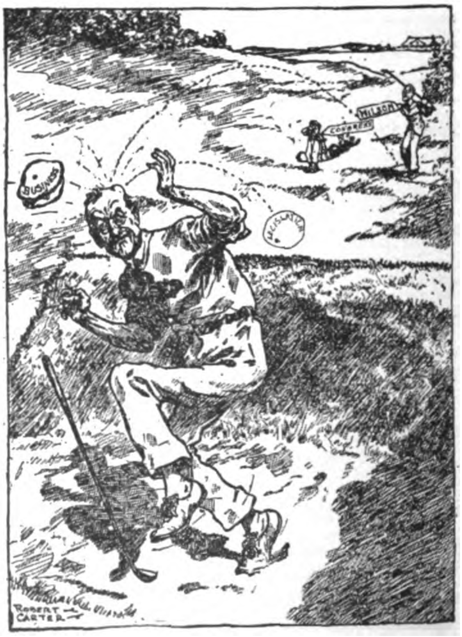
The three $25,000 verdicts were affirmed by the Arkansas and Iowa courts. Arkansas gave Rogers a brakeman $25,000 for loss of both legs and also gave Brown, a brakeman $25,000 for the fracture of his spine. The jury gave Brown $50,000, but he died while the case was pending in the supreme court and the court reduced it to $25,000 for his estate. The courts of Iowa gave Canfield, a section hand, who was generally smashed up in a wreck, $25,000. A jury had allowed $49,000, but the courts thought it was too much.

Two verdicts for $17,000 for injuries have been sustained. These were given in Illinois and Texas. The Illinois courts allowed Eidem, a freight handler, $17,000, by cutting down a verdict for $23,000 to that amount. Brice, a locomotive engineer, was allowed $17,000 in Texas for his leg, which had to be cut off six inches above the ankle. The jury had given him $22,000.

Two verdicts for $15,000 have been allowed railroad men for injuries. The Missouri courts allowed Lessenden, a switchyard employe, $15,000, which was originally for $25,000. Texas allowed Forester, an engineer, $15,000, whose accident caused total deafness.

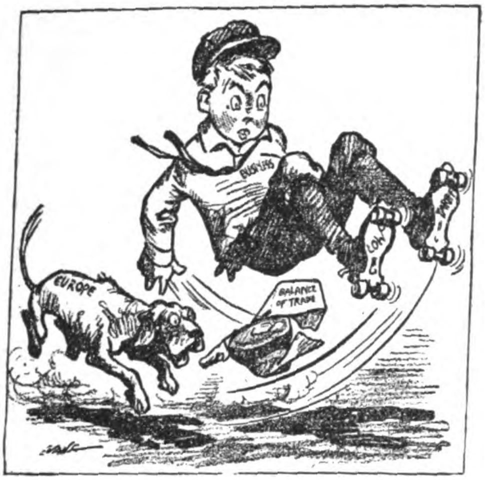
Two verdicts for injuries have been sustained for $14,000, three for $12,000, one for $12,500, two for $11,000 and one for $10,000. Fourteen verdicts have been sustained in amounts ranging from $6,000 to $8,750. The remaining verdicts of the fifty mentioned range from $1,500 to $4,000.

The highest verdict ever rendered for damages for personal injuries according to the decisions was rendered in California. A man by the name of Zibbell secured the judgment against the Southern Pacific Railroad Company. He lost both arms and a leg in an accident. He was twenty-seven years old at the time and was earning $2,500 a year. The jury gave him $100,000. The



"FORE" (PSYCHOLOGICALLY SPEAKING)
—From the New York Sun

A SLIP-UP



supreme court reduced the amount to $70,000. But Zibbell was not a railroad man. He was a horse trainer.

THE ENORMOUS DUTIES ENTAILED IN GOVERNMENT REGULATION OF RAILWAYS

In the June issue of the Railway World attention was called to the growth of the Interstate Commerce Commission as indicative of the larger activities of that body under the present requirements of the interstate commerce law. In brief, this statement showed that the working force of the Commission had grown from a total of 38 in 1888, to a total of 859, in 1913, while the total appropriation in the former year was $125,000 as compared with $1,853,629 in the latter.

The Peoples National Bank of Pittsburgh believing that if the facts of the enormous work and responsibility connected with railway regulation were better known, there would be less public clamor for even greater government control of business has obtained the following statement on the subject from an acknowledged expert. It is believed that no similar investigation has ever been attempted and in compiling the data the aid and suggestion of some of the foremost traffic authorities of the country were drawn upon. The facts and figures are amazing even to those familiar with the subject and have been compiled with painstaking care. They are submitted as an interesting study of a subject with regard to which even many railway officials are not intimately familiar:

ANTI-TRUST BILLS
You simply must hear one more. This is a sweet thing!
CURRENCY BILL

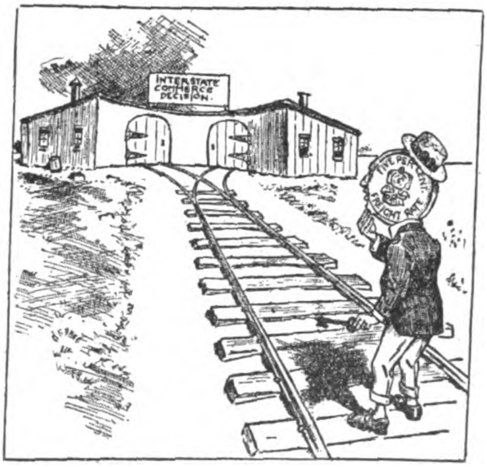
That Trying Moment—When Your Host Insists.—Chicago Daily News.

"The total number of stations outside of the State of Pennsylvania, in the United States, Canada, and Mexico, to which railroads in the State of Pennsylvania can sell tickets is approximately 77,744, multiplied by the number of stations on 51 roads in Pennsylvania selling interstate tickets, 2,531, multiplied by 2 (both directions), equals 393,540,128, the total number of passenger rates from all points in Pennsylvania to all destinations outside of Pennsylvania, in both directions, for which tariffs are filed with the Interstate Commerce Commission.

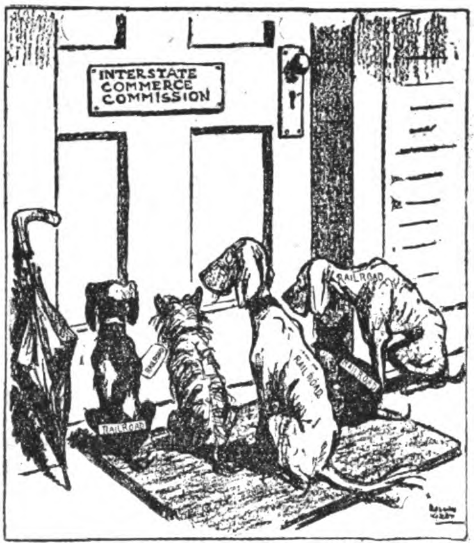
"The following is a condensed statement of all classified freight ratings that can be secured from published tariffs filed with the Interstate Commerce Commission, covering the various classes of articles that can be shipped by freight:

Classes of Freight	Number of articles of freight on which ratings apply. Less than Car load.	Car load.	Total Ratings.
1	1,575	31	1,606
2	953	238	1,191
3	1,273	400	1,673
4	668	857	1,525
5	73	2,190	2,263
6	....	415	415
Multiple ratings	1,312	104	1,416
Total	5,854	4,235	10,089

"The total number of railway freight stations in the United States, Canada and Mexico, to which freight shipments can be billed from Pittsburgh, Pa., is approximately 89,425, multiplied by 10,089



THE LADY OR THE TIGER, UP TO DATE
—From the Philadelphia Record.



WHERES THAT BONE?
—From the New York World.

(number of various ratable articles that can be handled by freight), equals 902,208,825, the total number of ratings covering all classes of freight articles for which tariffs are filed by the carriers with the Interstate Commerce Commission.

"There are approximately 4,346 freight stations on 89 railroads in the State of Pennsylvania from which freight rates are published, and filed with the Commission, to all the other 85,079 freight stations in the United States, outside of Pennsylvania, Canada, and Mexico; therefore, 85,079 multiplied by 4,346, multiplied by 10,089 (freight ratings), multiplied by 2 (both directions), equals 7,460,882,773,452, the total number of freight ratings from all stations in Pennsylvania to all other destinations outside of Pennsylvania, in both directions, for which there are tariffs filed by the carriers with the Interstate Commerce Commission, and from which tariffs any one of these total ratings can be ascertained.

"These figures represent only a small proportion of all freight ratings and passenger fares, for the reason that all rates to and from other points outside of Pittsburgh, as well as outside of Pennsylvania, are, vice versa, applicable to all shipping destinations in the United States, Canada, and Mexico. (Canada has 8,645 stations, and Mexico 4,940, which are included in the above calculations.)

"One railroad operating out of Pittsburgh advises that during a recent year its tariff and traffic departments prepared detailed figures covering all freight ratings for all stations on its line, which comprised a supply of 5,448,110 leaflets, pamphlets, and booklets (originals and duplicates, containing 57,323,706 pages of rates), for distribution to all agents, shippers, consignees, etc., and for filing with the Interstate Commerce Commission. The total weight of this output of tariffs for that year amounted to 333,859 pounds, equal to 167 tons. This is only one railroad.

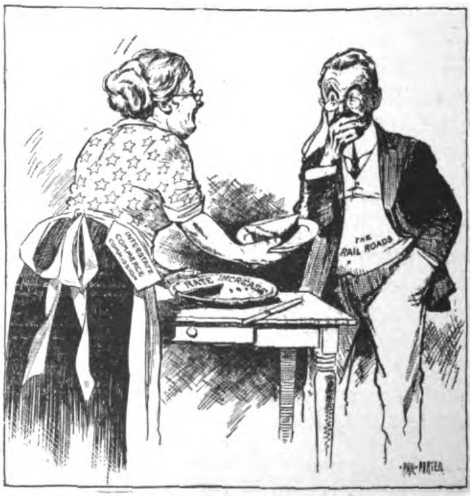
"These figures, so far as Pittsburgh and the State of Pennsylvania are concerned, readily show the stupendous undertaking imposed on all carriers in each State of the Union in the preparation and filing of detailed tariffs showing every passenger and freight rate, and multiples and combinations thereof.

"During 1912—the last year for which we have the Commission's annual report at hand—there were 6,550 complaints received and docketed by the Commission, during which period 3,090 rulings were issued. The Commission also conducted 1,154 hearings throughout the country, in the course of which approximately 125,000 pages of testimony were taken, relating to car service charges, absorption of switching, privileges or facilities affecting the value of service wherever in operation, demurrage charges, terminal allowances, carload weighing, bills of lading, individual freight cars, hours of service, examination of accounts, safety appliances, investigation of accidents, inspection of locomotive boilers, ash-pans, etc. In 1911 there were 2,179 steam railroads reporting to the Commission, whose jurisdiction also extends over interstate water carriers, electric railways, express companies, pipe lines, sleeping-car companies, telephone, telegraph, and cable companies—all of which carriers filed, in that year, an aggregate of 108,766 single copies of separate, original tariff publications of from 1 to more than 1,000 pages each.

"The duties of the Commission in the realm of accounting devolve upon the Division of Carriers' Accounts, a force of examiners being constantly engaged in examining the books and accounts of the carriers to determine whether or not they are being kept in the manner prescribed by the Commission. The reports of these examiners are very voluminous and are supposed to be passed upon by the Commission. The accounting rules have recently been revised, and on July 1, 1914, these new classifications will take effect, the changes necessitating close scrutiny of the accounts of carriers for some time, and numerous questions will be asked for rulings which will require careful consideration and a great deal of the Commission's time.

"The monthly and annual report filed by the carriers require a vast amount of labor in the verification and compilation of the data, and the results published in the annual reports of the Commission to Congress. Numerous special reports on a variety of matters are required in spec-

"YOU CAN'T HAVE ALL OF THE PIE"



ial investigations, and the results must be likewise passed upon by the Commission.

"The magnitude of the task of carrying out the provisions of the Federal Valuation Law is sufficient to keep the Commission engaged for a period of five to seven years. While the preliminary work of preparing forms and establishing methods for the prosecution of the work has been delegated to Hon. Charles A. Prouty, a former Commissioner, all matters pertaining to this subject must be passed upon by the Commission and rulings issued under its order.

"In order to comply with the comprehensive terms of the Interstate Commerce Act and amendments, it is imperatively necessary that the Commission have complete knowledge of all the conditions and requirements of shippers and carriers to enable that body to decide what may be adopted as useful and practicable regulations and policies, in accordance with the established authority vested in the Commission. Compliance on the part of all carriers has entailed upon them unprecedented labor and expense; and when it is realized that the Commission is required to give attention to all passenger and freight tariffs, and promulgate rulings applicable to all these and numerous other matters coming within its jurisdiction, it will indicate the magnitude of the immense burden imposed upon the Interstate Commerce Commission in undertaking the task of regulating transportation service throughout the United States."

COURTESY PAYS

The modern railway official is becoming more and more impressed with the fact that courtesy to the traveling public pays not only in its general effect upon the public mind, but because it becomes a real asset to any road who constantly insists upon its application, and should be enforced in all cases where employes come in contact with those who travel or employ the company's lines for shipping purposes. Courtesy belongs to the new methods of competition and, owing to the general equality in rates which now exists, railroads are coming to depend more and more upon the quality of the service which they render, and of which courtesy constitutes no unimportant part. Through its employment, thousands of dollars are annually turned into the coffers of railroads, and its influence often overcomes other handicaps and develops an atmosphere of friendliness to which patrons respond in the most gratifying manner.

A recent example of this effort on the part of important roads to impress upon every employe the importance of politeness and courtesy in dealing with the public, is illustrated by the following circular letter which has been sent by President Fairfax Harrison, of the Southern Railway, to every officer and employe of the system:

Washington, D. C., June 23, 1914.

To all Officers and Employes of Southern Railway Company:

A railroad is first of all a public servant. It follows that the success of a railroad as a business enterprise depends, in very large measure, not only upon the efficiency of the transportation it affords, but upon the personal treatment which those doing business with the railroad receive at the hands of its officers and employes. Therefore, in addition to doing everything in his power to promote the physical efficiency of our service, each officer and employe, whatever may be his rank or duty, must at all times consider the moral efficiency, and this means first of all that he should treat all patrons of the company and others with whom he may come into contact with politeness and courtesy. This is a primary rule of management of Southern Railway Company, but it is no more than each officer or employe himself expects of every one from whom he buys. This rule should be observed regardless of the amount of business that the individual may give to the company, not only because that is the part of a gentleman, but from self interest, for the occasional traveler or the small shipper of to-day may be the constant traveler or the large shipper of to-morrow. A nursed grudge growing out of a surly answer has been responsible for many of the troubles of the railroads. Let us then all try to please the public.

The station agent should remember that at his station he is the Southern Railway Company and that public opinion regarding the company in his community is very largely his responsibility. In addition to maintaining the highest efficiency at his station, he should see to it that he and his subordinates maintain pleasant and agreeable manners in meeting the public and that all questions, even unreasonable questions, are answered with politeness and courtesy.

It is equally important that trainmen should observe the rule of courtesy and politeness, giving full, responsive and intelligent information to those passengers who solicit it about anything that may happen on the road. The operation of a railroad is interesting to every intelligent man, and the more information such a man has about actual conditions the more he will understand the difficulties encountered in operation and so contribute to sound public opinion.

I am proud to believe that the general average of courtesy and politeness in the Southern Railway organization will compare most favorably with that of any railroad in the United States. Good manners are traditional in the South and our men are Southern men. This is attested by many letters which are received by the management commending individual employes for conspicuous acts of courtesy and painstaking efforts to serve our patrons.

Occasionally, however, letters are received complaining of instances of discourtesy. These may be entirely eliminated if each officer and employe will adopt as his rule of conduct the declaration by the late President Finley that "He serves the railroad best who serves the public best."

FAIRFAX HARRISON, *President.*

In line with the above, it is interesting to note a recent article written by C. R. Berry, assistant to the vice-president of the Chicago, Great Western Railroad on "The Relation of the Commercial Traveler to the Railroads." Mr. Berry, who writes in the official magazine of his company for the benefit of the road's employes, calls attention to the fact that the attitude of many railway employes towards commercial travelers is far from satisfactory and further emphasizes his point by showing how the traveling man is really a potent factor in producing or reducing traffic. A very significant feature of this influence is pointed out when he states that "the greater percentage of commercial travelers, representing big business interests insert routing instruction on orders taken by them, as most houses provide a space on their order blanks for this purpose." These men as a rule, have no preference in the matter of routing and are inclined to favor lines to whom they feel indebted because of friendship or courtesy which has been extended to them.

To quote from the article:

> "It is not uncommon to hear a traveling salesman, in the presence of many other knights of the grip congregated in a hotel lobby, "knocking" some railroad because he was furnished with incorrect information resulting in his missing a connection and a few hundred dollars worth of business in consequence, or because a certain station employe drove a hard bargain in the matter of rating excess baggage, or because of a hundred and one seemingly inconsequential things resulting from carelessness on the part of station employes in manner in which they meet the public.
>
> "Just remember that the traveling man is more than ordinarily appreciative of small courtesies and is just as ready to laud your road as he is to condemn it.
>
> "Traveling traffic representatives realize that it is no waste of time to cultivate the acquaintance of the commercial travelers with whom they come in contact and they can be materially aided in this by the employes of the operating department and train service.
>
> "Common courtesy costs us nothing and represents an investment paying substantial dividends.
>
> "Let's get right with the traveling man."

PRESIDENT RIPLEY ON GOVERNMENT OWNERSHIP

President Ripley has been widely quoted in the public press as stating as his opinion, that government ownership of railways was inevitable. It should not be understood, however, that Mr. Ripley has in any way changed his mind regarding the folly of such a development or of the dismal consequences that would follow, as he sees nothing in the Government conduct of affairs to justify a belief that it could operate the railroads with efficiency. He does believe, however, that as matters appear to be drifting now, there will, in a short time, be no other alternative. As he puts it in a recent newspaper interview, "Either conditions must be made easier for the railroads or the Government will have to buy them."

In brief, Mr. Ripley feels that the only changes that could be made which would remove the alternative of Government ownership, would be to give back to railroad executives, a large part of that control which has within the past few years been taken away from them by legislation and regulation. This would permit them enough freedom to utilize their expert knowledge, and thus permit them to continue to conduct a successful and progressive transportation plant. Mr. Ripley believes that the Government should treat the railroads as citizens and not so much as malefactors, and that, within recent years at least, it has been an unnecessarily harsh guardian and ought to now allow the carriers liberty to develop along legitimate lines.

Apparently the only difference of opinion which exists between Mr. Ripley and other prominent railway executives, rests upon the more optimistic viewpoint of the latter regarding the future. There is not a railway executive in the country who does not believe that, if present tendencies continued indefinitely, that Government ownership would eventually result. These same officials believe, however, that the present tendencies must, and will be checked, that the people will awake before too late and more fully appreciate the dangers which would result from such a development. In this viewpoint, we would agree, rather than with that of Mr. Ripley. During the last year or so, the railways of this country have done a tremendous amount of effective educational work which is unquestionably having its effect upon public sentiment. The carriers have established the habit of appealing more directly to the people, and the people, to a large extent at least, have responded in a most encouraging manner.

Mr. Ripley should not overlook the fact that of the millions of railway employes and of those dependent upon the railway industry, there are scarcely a handful who believe that any possible good could result from Government ownership. In fact the great majority of them are solidly opposed to any such trend and can be counted on to throw all the influence they possess against the development of a sentiment of this character. For the sake of progressive transportation, this feeling should be encouraged to its utmost limits.

Government ownership in other countries has, with rare exceptions, proved so disastrous or deplorable, that it does not seem possible that a public so alert as ours, would permit this country to make a similar mistake. If it is to be avoided, however, railway officials must continue to take the public into their full confidence and to keep them fully informed as to their requirements and the results of public ownership in other countries. In other words, the campaign of publicity which has recently become a prominent feature of railway work, must be continued unabated and it can be confidently expected that the American public will respond in a satisfactory manner provided, of course, that the deplorable incidents, which have been far too many during the past two or three years, will be largely eliminated from future operations.

Private ownership, severe as it has been handicapped recently, has by no means lost its grip, or the confidence of the people. In fact, in spite of occasional set backs, it has made more real progress recently in coming to a better understanding with the public than it has for several years. It rests largely with those in charge of railway affairs to see that the public in the future is kept generally informed and to permit no libel or mis-statement to be circulated, uncontradicted. The success of private ownership in the future, as never before, will depend upon the frankest relations between the carriers and the public.

AN EVEN DISTRIBUTION OF PASSENGERS

The Pennsylvania Railroad has recently issued instructions which might well be employed by other railways both to the advantage of themselves and their patrons. Many times, when passenger cars appear overcrowded, it is often the result of travelers congregating in certain cars and failing to walk through the entire train to see whether seats were really available. This is particularly true with regard to suburban travel, where, in innumerable instances, trains have performed part of their journey with passengers standing, while. as a matter of fact, empty seats of sufficient number to accommodate more than those standing, were available.

The Pennsylvania Railroad, recognizing the existence of this avoidable condition, has issued an order to the effect that trainmen in the future must see that no passenger is compelled to stand, if there are any seats left in any part of the train. The policy of the management is to provide sufficient cars to seat all the people normally using any train, and by the proper attention of trainmen it is believed that this can be generally accomplished, and a large amount of unnecessary criticism avoided. The following is a copy of the order which has recently been issued:

> "Investigation of complaints in regard to passengers being compelled to stand in overcrowded coaches has at times disclosed the fact that seats were available in other coaches on the same train. When it is found that a coach is overcrowded, a member of the crew must announce in the crowded coach the number of seats available in the other coaches. It is desirable that the number of seats be specified, in order to avoid disappointment in case of excess number of passengers. This matter should be especially watched at our large terminals in loading trains."

FAILURE OF GOVERNMENT OWNERSHIP IN BELGIUM

Examples continue to multiply of the failure of government owned railways in various parts of the world. One of the most recent striking evidences of extravagance of public ownership, as compared with private management, is furnished by the 1912 report of the railroads of Belgium, which has just been received by the Bureau of Railway News and Statistics at Chicago.

According to the statistics found in this volume, had Belgium's state railways been operated with the same economy as were the private companies, approximately $18,000,000 spent in operating the system, would have been saved. Instead, however, according to the same showing, the public railways of that country are practically bankrupt.

The Bureau of Railway News and Statistics, in its analysis of these figures, points out that although Belgium is a country primarily of government ownership, there are still five small companies operating railways. Operation of the Belgium railways reflected in 1912 the rising tendency of costs which has been experienced over the entire world and whereas in 1911 the state lines out of every $100 in gross receipts paid $66.89 to operate, they paid in 1912 the sum of $69.33.

Against this figure the private companies in 1912 paid out of every $100 of gross receipts respectively only $38.52, $56.11, $59.22, $62.26 and $67.19, the largest of the five companies making the best showing. In no case did a private company reach the $69.33 spent by the government management, and the average spent by all five companies to operate was only $41.42 out of every $100. The showing is the more striking in that it compares railways operating in the same country and therefore more probably subject to similar conditions than were they in different countries.

Returns for the government railways for 1911 and 1912 compare as follows with the private lines in 1912:

	State. 1911.	State. 1912.	Private. 1912.
Operated mileage	2,684	2,696	217
Receipts (000)	$60,610	$63,949	$6,797
Expenses (000)	40.545	44,327	2,815
Net (000)	20,065	19,622	3,982
Ratio exp. to receipts.	66.89%	69.33%	41.42%

Although subject to the same conditions as the government operated lines, the private railways, with only one exception, succeeded in holding down expenses hard enough to withstand rising costs, and four of the companies operated with a lower ratio between expenses and receipts than in the year before.

Operation of the government lines, on the other hand, has left the public railways bankrupt. Against their net after paying operating expenses which amount, as shown above, to $19,622,000 must be set the charges made on the railway budget for interest and sinking fund on the railway debt and for the rental of the small mileage lying in foreign territory. The charges amounted in 1912 to approximately $20,384,081, so that there was an actual deficit of over $762,000 on the operation of only 2,696 miles for the year.

The Interest of Railway Employes in Railway Prosperity.

(From the Southern News Bulletin.)

THE declining tendency of the net revenues of American railways during recent months and especially the much greater percentage of decline in net revenue than in either gross revenues or expenses, as shown by figures compiled by the Bureau of Railway Economics from the monthly reports of the railways to the Interstate Commerce Commission, should bring home to all railway employes with striking force the fact of their vital interest in the prosperity of the companies by which they are employed.

In any just analysis of the present situation, no intelligent observer can fail to take account of the many forces which are at work either for the purpose of depressing the gross revenues of railways or of increasing their expenses, either of which of necessity must result in a decrease in their net revenues.

Of all the movements for the purpose of decreasing the gross revenues of railways not one has held out any hope of advantage to the railway employe. Under existing conditions the railway employe gets forty cents of every dollar collected by the company, but where freight rates have been reduced it has not been to his advantage, for he has not been able to purchase a single commodity cheaper than before. The only result of such movements, so far as the railway employe is concerned, has been the reduction of the fund out of which his wages must be paid and the consequent impairment not only of his opportunity to get increased wages in the future, but even of the certainty of maintaining his present standard, for certainly the railways cannot pay out money if they do not receive it. It does not require an expert mathematician to see this, or the equally obvious fact that, when the margin of gross revenues left over after paying expenses approaches the point of danger, as it has on some railroad systems, retrenchment is necessary, and this means reduction of forces.

With such a possibility facing them, it is nothing less than amazing that railway employes as a whole have failed to take any active stand against movements for the reduction of the gross revenues of railways and against those movements which mean increased expenses for the railways without any increase in wages, as is the effect of many of the legislative and regulatory requirements which force upon the railways practices that are unnecessary in the opinion of the most experienced and the most progressive of railway managers.

There is hardly a community in the United States where the railway employes do not constitute a highly influential class. They are men of character and intelligence, or they could not hold their positions, and they are everywhere the best paid branch of labor. The trade of their families is sought by local merchants and professional men. They could exert a wonderful influence on public opinion, which is, after all, the high court of appeal on all matters in this country.

Why does not the railway employe raise his voice in protest against movements which can only result in decreased revenues for the railways without the least opportunity for benefit to himself?

Railway employes can make themselves felt in every community against the anti-railway agitators. How long is it going to be before they recognize that their own interest demands that they do so?

Contemporary Opinion

Government as a Railroad Wrecker.

(From the Philadelphia Public Ledger.)

IF the governments in Washington and Boston have their way it will soon be as difficult to sell railroad securities in New England as ice in Labrador, for the State and the Nation are doing their utmost to force the New Haven into the hands of receivers. The Federal suit to bring about the separation of the New Haven and the Boston and Maine was held up several months ago on the promise of the New Haven managers that they would sell their Boston and Maine holdings. Permission for the sale must be obtained from the Massachusetts Legislature. That body granted permission on condition that the purchaser of each share of stock shall agree to sell it to the State whenever the State chooses to buy. The New Haven managers refuse to sell their holdings under such conditions. No investor would buy shares which the State could demand at a time when the market was most depressed, hence as there can be no sale until the Legislature modifies its regulations next year, the Federal Government is preparing to file suit for forcible dissolution of the merger.

The attempt of the present managers to protect the shareholders from further loss has apparently failed through the persistent determination of meddling government to lay down impossible conditions. The managers maintain that they have not violated the anti-trust laws, and that they can establish the legality of the purchase of the Boston and Maine, but preferred to compromise with the Attorney General last year and yield several points rather than prolong the damaging uncertainty. It now looks as though all that will be left of the propetry when the lawyers in Washington and politicians in New England get through it will be a stupendous, devastating ruin.

Under Your Flag, Brothers.

(From the Railway Employes Journal, the official organ of the Brotherhood of all Railway Employes.)

YOUR flag it is, brother railroad men, that floats in to-day's sunlight over all the world's mightiest empire, an invitation to the oppressed, a challenge to despotism, a guaranty of justice and liberty.

Your flag it is by every right, so come you up and range yourselves about and under it—come with reverent boldness. Standing so, in the name of the flag demand for yourselves all that it means for you. Do not beg: demand.

Demand justice. Demand that the pledge and promise of the flag be kept to you and your industry as it is kept to all the other freemen that owe and pay it allegiance, and to every other industry but yours alone.

Demand liberty. Demand that the nation which so jealously guards the freedom of all its other citizens give you back your freedom. Demand that your industry's right to live be restored so that you may have again your right to live.

Demand relief from the intolerable oppression which, bowing down the wide, patient shoulders of your industry, thereby also makes your backs to bend and thereby grinds the face of every one of you in the dirt.

Come up and stand up reverently but boldly under your flag to make your demand in tones two million voices loud.

Your flag it is, indeed. Forebears and kinsmen of you railroad men bloodily earned you your share in that flag's blessings at Lexington, at Yorktown, at Bunker Hill. They earned it for you again when liberty's "lean, locked ranks went roaring down to die" under an alien sky across the Rio Grande.

Railroad forebears and kinsmen of you railroad men—aye, and some of you very men still bearing the arms of peace in the loyal legions of transportation—paid once more and paid in full for your share of that flag's glories and guaranties—paid at Antietam, and at Vicksburg, at Shiloh, at Lookout Mountain and at Gettysburg.

Lift up your eyes in reverent boldness to your flag and say to it and to your countrymen: "Those newer stars we railroad men set upon that azure field, for ours it was to drive and ours it is to keep our industry's highways out over the desert, across the rivers and under the mountains to the sea—the highways that make and hold this nation one. Those are our stars. Without us you would not have them."

Be reverent to your flag and be bold to your countrymen when you say under it to them: "How have you kept our flag's holy pledge to us—to us two millions that serve you endlessly by day and night; to us that bear you your food and your fuel so that you may live; to us that haul the goods of your mills, the crops of your gelds, the work of your hands so that you may prosper; to us without whose industry your industries could not exist?"

In the name of your flag ask your countrymen —ask them boldly—why two hundred thousand of your brothers-in-toil, their brothers-in-faith, go hungry in a land and a time of plenty. Ask them why nearly a half million strong, trained, competent railroad hands have not work to do nor wage to draw; why a million railroad men, women and children—little, helpless children, taught trustfully to worship that flag—grow hungrier, gaunter and shabbier every day.

By the right of your flag call on your countrymen and bid them look what has been done under that flag to your industry and to you. Bid them see how it has been starved until now you, too begin to starve. Bid them mark how hands that eagerly smooth the way for all other industries eagerly strangle your industry and dig it a grave.

In the name of your flag and standing in its shadow, ask your fellow countrymen to witness how every other industry fixes its own rates of compensation, and fixes them higher and higher—and how government, state and national, fixes your industry's rates and fixes them lower and lower.

Ask your countrymen boldly and sternly: "Is that justice, the justice of the flag?"

Ask them why and how in a singe year they let your industry's net income be cut one hundred million dollars while every other industry's income grew: why in one year they let your industry's tax bill, already the largest in the land, be swollen eight million dollars?

Ask your countrymen loud and clear: "Is that freedom, the equal freedom of the flag?"

Under the guaranty of the flag summon your countrymen to judge between you and the professional politician who denies you and your industry the right of petition and the right of free speech—the vote-begging, canting politician-in-office who prints at public expense for private advantage a million-word speech denouncing those who dare respectfully and humbly to ask only fair play for your industry.

Ask your countrymen in righteous wrath: "Is that liberty, the sacred liberty of the flag?"

Standing up under the flag two millions strong, demand of your countrymen that they deal with the flag-haters and self-seekers who, traducing your industry and you seek to make uniforms of service liveries of servitude, who would complete government destruction of your industry with government ownership.

Tell your countrymen you know what government ownership means. Tell them it means the same kind of treatment the postman gets and the railway mail clerk—a good deal less than a fair day's wage for a good deal more than a fair day's work; that it means making European flunkeys out of American freemen; that it means going from a self-respecting service of honest industry to a boot-licking slavery of dishonest politics; that the demagogues who are running your industry into bankruptcy now want to run you into the bread line.

Call upon your countrymen for the honor of the flag to shut the vile mouths of such as declare, out of vile hearts, that your industry is a thief and a murderer, "whenever and wherever" it "can steal and kill at a profit"—a lying stigma stamped by hands that never built anything upon two millions of you that have built a nation's commercial greatness.

You, crying out to and under our flag, shall be heard. Demand the justice of the flag and justice shall be done your industry and you. Demagogism has barred all the other doors and paths to relief. But demagogism lives only by the ballot and by the ballot it shall be slain—by your ballots and the ballots of your countrymen.

Under freedom's flag make every ballot a bullet shot straight into the body of your foe, your industry's foe, your country's deadliest foe—the foe that wants through the government to own you and through you to own the government.

Standing yet free under freedom's loveliest emblem, demand that your flag be made to mean for you all that it means for the men of every other American industry.

Demand that the red and the blue of it be made free of stain and tarnish for you. Demand that its stars shall shine clear and steady again for you. Demand that its white be made clean again by promise kept and faith fulfilled to you.

Only you can save your industry and yourselves, your heritage and your birthright—you, under the flag, reverent but bold, two millions strong. The million hungry railroad men, women and children, early victims of demagogism, cry out to you. They cry for help and they cry a warning. Save them. Save your industry. Save yourselves.

Criminal Delay.

(From the "Bache Review.")

THE delay in the rate decision, while one railroad after another of the weaker class approaches receivership, can only be adjudged as obstinate disregard of the country's crying needs.

It is reasonable to conclude that had rates been raised ten per cent in 1910, all the receiverships which have occurred since would have been avoided. There might have been necessary some physical readjustments of financial machinery, as in the case of St. Louis & San Francisco, which, under restrictions of its charter was prevented from financing through stock issues and was compelled to dangerously pyramid its bond issues. But sufficient earnings would have averted probably in every instance the disastrous resort to receivership.

This, then, is what regulation of railroads carried to the extreme and unbusinesslike extent of allowing a political commission to arbitrarily control rates, brings the country up against. If the decision is finally to be favorable, it is reasonable to compute the loss, by delay in announcing the decision, to the hundreds of business concerns in the United States, at a million dollars or more a day in overhead expenses, which are necessarily continued but are not paying a profit.

Mr. Edward C. Simmons, who is president of the Simmons Hardware Company, and who declined the Presidential nomination for the Reserve Board, is quoted as saying in part:

"The greatest danger now confronting the country is the dishonest and shameful treatment given the railroads. Public opinion, unfairly made, has caused the robbery of the railroads for eight years.

"If I were President of the United States with power over Congress—and there have been such Presidents—I would legislate the present Interstate Commerce Commission out of existence and two weeks afterward I would enact another law creating a new Commission, and I would see that fair men, unafraid of muckrakers, demagogues and Socialists, thereafter regulated the freight rates of our railroads. I say this, although I am a shipper and pay out large sums to our transportation companies.

"I believe in the strict regulation of our railroad corporations, but I am opposed to a policy which stops enterprise, keeps capital locked up in bank vaults, deprives thousands of men of gainful employment and lets wild grass grow where there should be wheat, corn, cotton and hay."

If President Wilson had appreciated, as was constantly asserted in these columns and in a few other publications, that the failure to raise railroad rates last January would precipitate the country into a severe recession of business, he would immediately after the passage of the Currency Bill have turned his whole energy and influence into forcing a favorable decision. He was then in the full flush of a great victory and his wish would have been, even if reluctantly, converted into law by so obdurate a board as the Commerce Commission. They could not have stood against it because the whole country was then enthusiastically behind the President on account of his really great achievements.

The other troubles which have gathered since are negligible compared with the shameful condition into which the railroads have been bullied, and this last is the real overwhelming cause of the business depression. This depression has prevailed in nearly all lines.

The trouble which is holding back prosperity is not shortage of capital, but lack of confidence on the part of capital.

For ten years a war has been waged in this country against capital. Capital has been beaten and is withdrawing.

Is it any wonder that business, which depends upon capital even more than upon labor, feels the effect and shivers and shrinks?

Capital is the backbone of railroad enterprise and upkeep. Capital invested in railroads has been scrimped and starved. Is it any wonder that it refuses to go further, and that the railroads are in trouble all along the line?

President Wilson's official statement to the Virginia editors will have some good effect in reassuring the country, but there are two or three things that, if done at once, would go much further than verbal assurances to lift the country out of its real depression.

First of all, railroad rates should be raised at least five per cent. This is not enough, but anything less will be eventually ineffectual. If the President has the power to bring this about, he should use it. The condition of the railroads is one of the greatest causes of the slump in business. And upon the restoration of railroad credit by granting the carriers sufficient net-earning power, depends their future and the well-being of the whole country. This restoration of credit hinges upon the Government's action.

The Interstate Commerce Commission is said to be rewriting its decision on rates, because the decisions of the Supreme Court have made this necessary. "Apparently," says Mr. Willard, of the Baltimore & Ohio, "while the members of the Commission have been writing their decision, the United States Supreme Court has been shaking the table." In one of the cases the Court decided that the Commission had power to dispose of a whole group of rates by establishing a percentage. This being so, the Commission can now easily write in the words "five per cent" and let the thing go at that. If there are any mistakes they can be corrected afterwards.

The signal for such a gigantic boom as President Wilson predicts would be a brief official announcement by the Interstate Commerce Commission, somewhat as follows:

"The petition of the Eastern Railroads for an advance in freight rates to the extent requested, is hereby allowed and approved."

The Supreme Court's Decision in the Inter-Mountain Case.

(From the *Commercial and Financial Chronicle.*)

IT is scarcely possible to over-estimate the significance and importance or to exaggertee the far-reaching consequences of this week's decision of the United States Supreme Court upholding the action of the Interstate Commerce Commission in the famous intermountain cases. No order ever issued by the Interstate Commerce Commission embodied such a sweeping exercise of its powers and none such an arbitrary use of those powers. In this order the Commission went further than it had ever attempted to go before; in effect, it interpreted the enlarged authority granted it under the amendatory law of 1910 as giving it the right to do anything and everything it might choose to do in the way of fixing and regulating rates—to make traffic centres, to unmake them, to decree whether (through the prescribing of rates) natural advantages should be overcome, to decide what jobbing districts and what manufacturing sections should be allowed to cater to the needs of the remoter parts of the country, and, generally, to decree life or death to important interests of long-established standing—always through the instrumentality of the rates fixed, the Commission being the sole arbiter in all instances, with no right of appeal to any other authority.

We say the Commission construed its new powers in this broad way. In thus construing them, the Commerce Court, since abolished, held that the Commission had gone too far. The Supreme Court, however, now reverses the Commerce Court and says the Commission really possesses all the powers assumed by it. That ends the matter, and leaves the Commission in supreme control, with full liberty to devise schemes of rate-making in accord with its own dictates. It is not an inviting prospect for the railroads; neither is it an inviting prospect for the country at large.

Nominally, the point at issue in the cases which have now been definitely settled by the highest judicial tribunal was the interpretation and application of the long-and-short-haul clause as amended by the Act of 1910. Actually, however, much larger considerations were involved, as already indicated, and as will appear from a recital of the facts of the case. The immediate question was whether the carriers should be allowed to charge more for the shorter haul to intermountain territory in the States of Washington, Nevada and Arizona than for the long haul to the Pacific Coast, and, if so, how much more. The custom has been to charge intermountain points the rate to the Pacific Coast (which, being fixed by water competition, is a very low rate) plus the local charge for hauling the freight back to the intermountain point, though this rule has been deviated from in certain cases. The Interstate Commerce Commission had the cases under consideration a long while and issued several orders concerning the same. It shifted its position several times because of new objections raised, and was made to recognize that in the last analysis the controversy was one of competition of different markets. It was not merely the lines reaching the Pacific Coast that were involved but practically all the roads throughout the whole country, excepting only those in the South, for merchants on the Pacific Coast are anxious to serve intermountain territory, so are those at Chicago, likewise those at Buffalo and Pittsburgh, and not less so those on the Atlantic Coast.

The problem was and is admittedly a difficult one, and the wisest course for the Commission would have been to have allowed the existing conditions to continune unchanged, since they were the outgrowth of natural circumstances. But the Commission was determined upon a readjustment and proceeded to bring about the adjustment through wholly arbitrary methods, with the result that the whole country was quickly up in arms against it. We imagine the Interstate Commerce Commission experienced a distinct feeling of relief when the Commerce Court stepped in and granted the injunction restraining the orders from going into effect, for, after having modified its orders many times during the previous fifteen months, it seemed certain that further modifications would be made before the new scheme would be allowed to go into effect.

Notice what the Commission proposed to do by its order. It proposed that from St. Paul and the Missouri River no higher charge should prevail to any intermediate place than to a more distant place on the Pacific Coast. In other words, Spokane and other points in intermountain territory were given precisely the same rates as points on the Pacific Coast from destinations no further east than the Missouri River. For freight originating in Chicago territory, the Interstate Commerce Commission decreed that rates to intermediate points might be 7 per cent higher than the rates to Pacific Coast terminals. For freight originating in the Buffalo-Pittsburgh zone, the Commission allowed a charge of 15 per cent higher to intermountain territory than to the Pacific Coast, and for freight originating on the Atlantic Seaboard a 25 per cent increase over the long-haul rates was permitted.

It will be observed that the proposed rates and percentages were wholly arbitrary. Justice White, who wrote the opinion of the Court, in combating the attacks made by the carriers upon the zone system of rate making proposed by the Commission, pointed out that the railroads themselves have always followed a similar practice and divided the country into districts, and he averred that "though somewhat modified, the zones as thus selected by the Commission were in substance the same as those previously fixed by the carriers." But these modifications and the changes in rates coincidentally inaugurated by the Commission in the rates themselves make all the difference in the world. It stands to reason that if the Commission had done nothing more than to sanction what had previously existed, the carriers would not have attacked the Commission's order. As a matter of fact all the carriers asked in the first instance, in petitioning the Commission, was that they be permitted to continue the rate previously in force both to Pacific Coast points and to intermountain points, the latter being on a higher basis than the former.

This petition the Commission denied, and proposed, instead, something novel, embodying striking conceptions of its own, altogether out of accord with previous practices. In proposing, moreover, a new system of rate schedules, it undertook to pass upon the merits of rival jobbing districts and markets. Observe in the first place that in placing intermountain points upon a basis of equality with Pacific Coast points, it put the jobbers in intermountain territory in position to cater to certain communities which heretofore have been served by the jobbers on the Coast. The advantage which the Pacific Coast centres now have is a natural one. The advantage which the Commission seeks to confer upon intermountain points is a wholly artificial one. Observe, furthermore, that the Commission in the distribution of its favors does not proceed with entire impartiality—in fact far from it. Intermountain points are to stand on a basis of equality with the Coast centres only in the case of destinations no further east than the Missouri River. On freight originating in Chicago territory, as already stated, the Interstate Commerce Commission holds that rates to intermediate points may be 7 per cent higher than the rates from the same place of origin to Pacific Coast terminals. It is a little perplexing to understand why it should be a heinous offense, involving preference and discrimination, to charge more to intermountain points than to Coast terminals where the shipment comes from destinations no further east than the Missouri River, while a higher rate to intermountain points than to the Coast should be innocuous and free of offense and of preference and discrimination when the shipments originate in the Chicago district.

But if the reason for such a distinction is difficult to discern, the effect is perfectly obvious. It is a discrimination against jobbers in the Chicago district. The Commission in effect decides that business with intermountain territory shall be limited to Missouri River districts. And the discrimination becomes more marked the further east we go. While in the view of the Commission it is wrong to charge more to intermountain points than to the Coast when the freight originates in Missouri River territory, the rate may be 15 per cent higher to intermountain territory than to the Pacific Coast when the shipments originate in the Buffalo-Pittsburgh zone, and when it originates on the Atlantic Seaboard it is right and proper and justifiable to add an increase of even 25 per cent over the long-haul rates. These Eastern zones are in any event handicapped because the rates to the Coast are higher by reason of the longer distances, and the Commission in its wisdom proposes an additional handicap of 15 or 25 per cent. What is this but an attempt to say what markets shall participate in the business?

It was for this reason that the Commerce Court held that the Commission had exceeded its authority. Judge Mack said with reference to the order of the Commission that it "goes beyond any authority that has been vested in it, for it is not in the power of the Commission to say that 107 per cent or any given percentage of an unknown less than reasonable rate to the Coast is necessarily a maximum reasonable and non-discriminatory rate from the same point of origin to an interior point." He also said the practical effect of the Commission's order was either to compel a blanket rate from the entire East to the entire West, or to prevent the carriers from getting all the business which they now secure without loss by making rates which enable merchants to meet market competition. Judge Archbald (since removed), in a separate but concurring opinion, said that by no device could the whole United States be made a "special case." He also asserted that such wholesale rate making entirely disregarded the right of the carriers to have considered what in each instance is a reasonable rate between points involved.

The United States Supreme Court sweeps all these contentions aside. Justice White's opinion deals largely with the legal technicalities of the case and does not readily adapt itself to quotation. He considers the matter entirely from the standpoint of the change made in the long-and-short-haul clause by the Act of 1910. Previous to the amendment of 1910, the long-and-short-haul clause, or Section 4, of the Commerce Act read as follows: "That it shall be unlawful for any common carrier subject to the provisions of this Act to charge or receive any greater compensation in the aggregate for the transportation of passengers, or if like kind of property, *under substantially similar circumstances and conditions* for a shorter than for a longer distance over the same line in the same direction, the shorter being included within the longer distance," &c., &c. Under the 1910 amendment the words we have placed in italics, namely, "under substantially similar circumstances and conditions," were eliminated and some other changes made in the section. With the omitted words in the section, the carriers could not be called to account if they charged more to near points than to far points, provided the circumstances and conditions were substantially dissimilar, even though they had not applied to the Commission and obtained its consent. With the quoted words omitted, however, a higher charge can in no instance be imposed without the sanction of the Commission.

Justice White says that the effect of the amended fourth section was not to create new powers theretofore non-existing, but simply to re-distribute the powers already existing. "In substance," he says, "the amendment intrinsically states no new rule or principle, but simply shifts the powers conferred by the section as it originally stood; that is, it takes from the carriers the deposit of public power previously lodged in them and vests it in the Commission as a primary instead of a reviewing function."

It had been insisted that there was no power, after recognizing the existence of competition and the right to charge a lesser rate to the competitive point than to intermediate points, to do more than fix a reasonable rate to the intermediate points; that is to say, that under the power transferred to it by the section as amended the Commission was limited to ascertaining the existence of competition and to authorizing the carrier to meet it without any authority to do more than exercise its general powers concerning the reasonableness of rates at all points. But Justice White says this is directly in conflict with the statute as construed by the Court and with the plain purpose and intent manifested by its enactment. "To uphold the proposition, it would be necessary to say that the powers which were essential to the vivification and beneficial realization of the authority transferred had evaporated in the process of transfer and hence that the power perished as a result of the act by which it was conferred." He continues:

"As the prime object of the transfer was to vest the Commission within the scope of the discretion imposed and subject in the nature of things to the limitations arising from the character of the duty enacted and flowing from the other provisions of the Act with authority to consider competitive conditions and their relation to persons and places, necessarily there went with the power the right to do that by which alone it could be exerted, and therefore a consideration of the one and the other, and the establishment of the basis by percentages was within the power granted. * * *

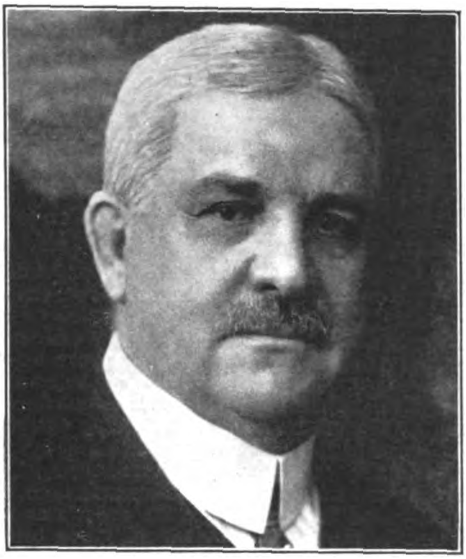
"Except as to questions of power, there is no contention in the argument as to the inequality of the zones or percentages or as to any undue preference or discrimination resulting from the action taken. But be this as it may, in view of the findings of the Commission as to their system of rates pravailing in the tariffs which were before it, of the inequalities and burdens engendered by such system, of the possible aggrandizement, unnaturally, beyond the limits produced by competition in favor of the competitive points, and against other points by the tariff in question, facts which we accept and which indeed are unchallenged, we see no ground for saying that the order was not sustained by the facts upon which it was based, or that it exceeded the powers which the statute conferred or transcended the limits of sound legal discretion which it lodged in the Commission when acting upon the subject before it."

The only point in the decision from which any comfort can be derived is that the Court reiterates the rule laid down by it in a previous decision, that, while findings of fact made by the Commission within the scope of its administrative duties must be accepted in case of judicial review, such doctrine does not relieve the courts in a proper sense from determining whether the Constitution has been violated or whether statutory powers conferred have been transcended or have been exercised in such an arbitrary way as to amount to the exertion of authority not given—"doctrines which but express the elementary principle that an investiture of a public body with discretion does not imply the right to abuse, but on the contrary carries with it as a necessary incident the command that the limits of a sound discretion be not transcended, which by necessary implication carries with it the existence of judicial power to correct wrongs done by such excess."

Personal

Edward Dickinson.

EDWARD DICKINSON, who on July 6th, became president of the Kansas City, Mexico and Orient Railroad, was born October 8, 1850, at Cumberland, Md. Educated in the common schools. Entered railway service October, 1861, as messenger, Cleveland & Toledo Road in freight office at Cleveland, Ohio, since which he has been consecutively 1862 to 1864, messenger, same road; 1865 to 1868, telegraph operator, Atlantic & Great Western Railway; 1868 to 1869, assistant train dispatcher, same road; for a short time in 1869, was clerk and operator, Union Pacific Railway at Omaha, Nebraska; 1870 to 1872, train baggageman and United States Express messenger, Atlantic & Great Western Railway; 1872 to 1875, train dispatcher, Nebraska Division, Union Pacific Railway; 1875 to 1878, chief dispatcher, Laramie Division and 1878 to 1883, superintendent, same division; 1883 to 1885, general superintendent, Wyoming Division, same road; 1885 to 1887, assistant general superintendent, Union Pacific System; 1887 to 1889, general superintendent, and 1889 to July, 1890, general manager, Missouri River Division, same system; July, 1890, to May, 1891, general superintendent, Trans-Ohio Division, Baltimore & Ohio Road, at Chicago; May, 1891, to April, 1893, assistant general manager, Union Pacific System; April, 1893, to November, 1902, general manager, same system; November, 1902, to March 7, 1912, vice-president and general manager, Kansas City, Mexico & Orient Railway, at Kansas City; March 7, 1912, to July 6, 1914, receiver, same



EDWARD DICKINSON.

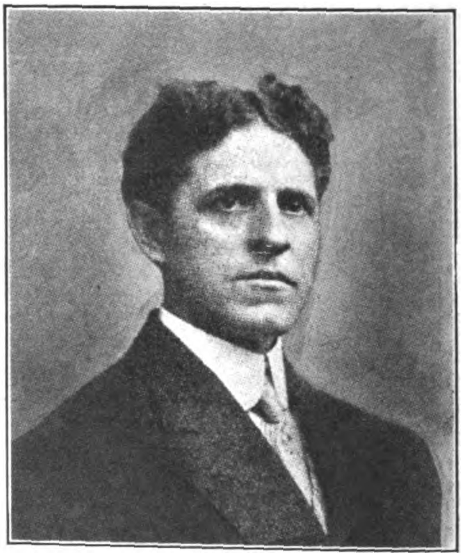
road; July 6, 1914, president, Kansas City, Mexico & Orient Railroad.

George C. Taylor.

AFTER serving for thirty-three years as president of the American Express Company, James C. Fargo has retired from that position to obtain relief from business cares and the directors of the company have elected George C. Taylor, first vice-president and general manager of the company in Chicago, to succeed Mr. Fargo.

Mr. Taylor entered the service of the American Express Company in Wisconsin in 1885, being employed in the wagon service. He successfully filled practically every position in the office service, such as transfer clerk, trace clerk, money clerk, cashier and agent during the next few years throughout various western states. From that line of work Mr. Taylor was transferred to superintendent's chief clerk and then as route agent on the Great Northern lines and also throughout the southern states at the time when service was inaugurated on the M. K. & T., Illinois Central and Yazoo & Mississippi Valley lines in the years 1892 and 1893. Mr. Taylor was later made assistant superintendent of the Southern Division with headquarters at St. Louis, then transferred to Chicago as general agent, when he was promoted to assistant general manager of the Central Division at Cleveland, from which position he was transferred two months later to the new Pacific Division with headquarters at Salt Lake City with the title of manager. On the first of July, 1911, he was transferred to Chicago as general manager of the Western Department, embracing all of the company's lines west of Buffalo, N. Y. In February, 1912, Mr. Taylor was further honored by being elected to a vice presidency in the company, and has since served as vice-president and general manager in charge of the company's interest in the West.

GEORGE C. TAYLOR.

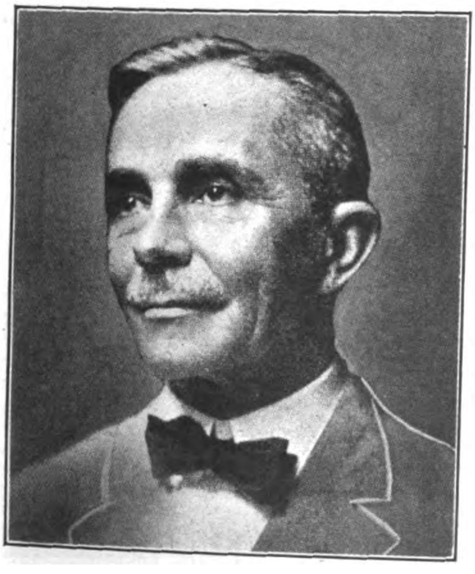


Frank H. Alfred.

FRANK H. ALFRED, general manager of the Pere Marquette, has been appointed chief executive officer for the receivers, with headquarters at Detroit, Mich., succeeding W. A. Garrett, resigned. Mr. Alfred was born at Logan, Ohio, December 24, 1866, and was educated at the University of Michigan and the Ohio State University. He began railway work in 1887 as rodman on construction of the Columbus, Lima & Milwaukee, and later was made resident engineer. From March, 1889, to 1894, he was assistant engineer of the Norfolk & Western in charge of field work on construction of the terminal at Columbus, Ohio, and from the latter date until April, 1896, was assistant to the chief engineer of the Hocking Valley. He was then successively engineer maintenance of way of the Cleveland, Akron & Columbus and the Wheeling & Lake Erie, and in 1900 became assistant engineer on the Pere Marquette. He was made chief engineer in October, 1902, and resigned October 1. 1905, to become manager of the Canadian White Company, Limited, of Montreal, Que. Mr. Alfred returned to railway service in 1908 as assistant to the president of the Cincinnati, Hamilton & Dayton, and from August, 1910, to April, 1912, was general superintendent of that road at Cincinnati, Ohio. He then returned to the Pere Marquette as assistant general manager, being made general manager in December of that year.

J. W. Everman.

J. W. EVERMAN has been appointed vice-president and general manager of the St. Louis Southwestern Railway. Mr. Everman was born February 1, 1861, graduated from the public schools of Philadelphia in 1876. During 1877 and 1878 he was engaged in the mining industry in Venezuela, South America. He returned to the United States and began his railroad career—a mere boy, acting as clerk in the ticket department of the Pennsylvania Railroad. Early in 1881 he resigned his Philadelphia position and went to Texas, going to work for the Texas & Pacific Ry., at Marshall. Mr. Everman went from one clerkship to another, all the time attending to his duties with a sacredness that has marked his career in later years. Not long afterward he was made chief clerk; then a private secretary to a superintendent, with the Texas & Pacific. The two years that followed May 10, 1892, he was assistant general superintendent, and two years after that became assistant general manager of the same road. Mr. Everman has a record for making and holding friends. He regards friendship as one of the dearest things in a man's life. The church and the Y. M. C. A. as well as other moral and uplifting organizations, have always claimed supporting attention from him. In railroad circles he has the reputation of being fair and impartial. With training as to detail and capacity for work, Mr. Everman is master of his business.



JOHN W. EVERMAN.

C. L. Macmanus.

C. L. MACMANUS, who has been appointed demurrage supervisor for Texas, was born at Brownsville, Texas, January 8, 1869. Began railway work as clerk in auditor's office of the Mexican National R. R. in City of Mexico, 1889; was next in service of that line as cashier at Nuevo Laredo, Mexico, and continued in that position until June 30, 1890, when he was transferred to Alice, Texas, as cashier for the San Antonio & Aransas Pass, and Texas Mexican Rys., (latter leased line of the Mexican National. Continued in those two positions until December 7, 1890. On December 8, 1890, transferred to Monterey, Mex., as cashier of the Mexican National. Continued in that position until June 28, 1891, when resigned to enter service of the Monterey & Mexican Gulf R. R. Co., as chief clerk at Tampico, Mex., July 1, 1891, and continued in that position until September 18, 1892. On September 19, 1892, appointed agent at Tampico, Mex., with same company, and continued in that position until February 2, 1893, when transferred to Trevino, Mex., as agent of the same line; continued in that position until June 9, 1893. On June 11, 1893, entered service of the Mexican International R. R., at Jaral, Mex., remaining there until January 26, 1894, when resigned to enter service of Monterey & Mexican Gulf a second time at Tampico, Mex., and resigned that position in 1894 to engage in railroad service in the United States. Entered service of the Gulf, Colorado & Santa Fe, as cashier, at Cameron, Tex., July 24, 1894, and continued in service of that line until June 30, 1910, being successively promoted first as agent at Cameron, Tex., in 1896; then to agency at Temple, Tex., in 1899; then to agency at Dallas, Tex., in 1902. From December 5, 1903, date of entrance of Rock Island Line into Dallas, was also the agent of that line up to June 30, 1910. On July 1, 1910, entered service of Frisco Lines at Brownsville, Tex., in capacity of general agent for St. Louis, Brownsville & Mexico Ry. Co.; was later appointed general agent for the Brownsville & Matamoros Bridge Co., and for the Rio Grande Railway Co., (in June, 1912, was made vice-president and general manager of the Rio Grande Ry. Co.), and continued with those properties until he resigned to accept present service.

H. O. Hukill.

H. O. HUKILL, purchasing agent of the Pennsylvania Company was retired on June 1st, under the rules of the pension department.

Mr. Hukill was born at Steubenville, Ohio, May 25, 1844. After attending public school at that place until sixteen years of age, he entered the service of the Steubenville and Indiana Railroad Company, March 19, 1860, as Messenger in the Superintendent's office. He learned telegraphy, and in 1863 became an assistant operator; and on April 12, 1864, he entered the service of the Pittsburgh, Fort Wayne and Chicago Railway Company and the Cleveland and Pittsburgh Railroad Company as telegrapher and clerk in the office of the purchasing agent at Pittsburgh. He was advanced to the position of chief clerk to the purchasing agent January 1, 1877, continuing in that capacity until June 1, 1887, when he was made assistant to purchasing agent, holding that position until January 1, 1894, when he was appointed purchasing agent of the Pennsylvania Lines, and continued at the head of that department until his retirement, June 1, 1914, under the regulations of the pension department—an unbroken record of more than 54 years.

Rufus M. Pile.

ON July 1st, Rufus M. Pile, assistant general passenger agent of the Pennsylvania Railroad, was retired under the pension rules of the Company, having reached the age of seventy years. He has served the Pennsylvania Railroad system more than forty-four years.

Mr. Pile was born in Jeffersonville, Indiana, on June 25, 1844. He was educated at Jeffersonville High School. He entered the service of the railroad as a clerk in the general ticket office of the Jeffersonville, Madison and Indianapolis Railway, now known as the Louisville Division of the Pan Handle System, May 19, 1865. On June 1, 1873, he was appointed rate and division clerk in the passenger department of the Pennsylvania Railroad at Philadelphia. In September, 1883, he was promoted to chief clerk to the assistant general passenger agent, and on November 6, 1888, he was made chief clerk to the general passenger agent.

On June 1, 1903, when Mr. J. R. Wood was made passenger traffic manager, and Mr. George W. Boyd promoted to the position of general passenger agent, Mr. Pile was promoted to succeed Mr. Boyd as assistant general passenger agent.

Mr. Pile is a member of the Union League of Philadelphia, the Historical Society, Genealogical Society, New England Society of Pennsylvania, the Pennsylvania Society, Sons of the Revolution, and the Masonic Fraternity.

R. M. PILE.

W. H. Finley.

W. H. FINLEY, who has been appointed chief engineer of the Chicago and North Western Railway, was born in Newcastle, Del., and educated in the public schools. His engineering training was acquired by private instruction. In 1881 he entered the service of the Edgemoor Iron Co., remaining with that company until 1887 when he entered the service of the Chicago, Milwaukee & St. Paul Ry. in the bridge and building department. He remained with that company until 1892 when he entered the service of the Chicago & North Western Ry. as engineer of bridges. He has filled successively the positions of engineer of bridges, principal assistant engineer, assistant chief engineer and now chief engineer. Mr.

W. H. Finley.

Finley is a member of the American Society of Civil Engineers, past president of the Western Society of Civil Engineers and past president of the Chicago Engineers' Club.

O. S. Bowen.

O. S. BOWEN, who has been appointed principal assistant engineer of the Great Northern Railway Company, entered railway service in 1888, in the engineering department of the Coeur d'Alene Railway and Navigation Company in Idaho. He has also held various positions in the engineering department of the Washington and Idaho Railway, the Seattle, Lake Shore and Eastern Railway, the Spokane Falls and Northern Railway, the Nelson and Fort Sheppard Railway and the Great Northern Railway, until 1903, when he was made resident engineer of the Great Northern Railway at Spokane, Wash. In 1913, he was transferred to a similar position at Seattle, Wash., which he held until his recent appointment. All Mr. Bowen's engineering experience has been in the states of Idaho, Montana, Washington and British Columbia.

D. F. Kirkland.

D. F. KIRKLAND, who has recently been appointed general manager of the Georgia and Florida Railway, was born in 1866 in Lownds County, Ga. He entered railway service in 1883 as bridge laborer on the South Florida Railway and since then he has been consecutively—1884, work train conductor; 1885, locomotive fireman; latter part of 1885 to 1887, telegraph operator at various points, Savannah, Florida & Western Ry.; 1887 to Jan. 1, 1888, copying operator in dispatcher's office at Savannah, Ga.; Jan. 1, 1888, to Sept. 1, 1889, dispatcher, same road; Sept. 1, 1889, to April 1, 1891, dispatcher, Georgia, Southern & Florida Ry., at Macon, Ga.; April 1, 1891 to July, 1898, dispatcher, Plant System; July, 1898, to Sept., 1900, trainmaster, same system; Sept., 1900, to Dec., 1905, division superintendent, same system, now operated by the Atlantic Coast Line, at Waycross, Ga.; July to Dec., 1906, superintendent transportation, Georgia, Florida & Alabama Ry.; May, 1907, to April, 1911, chief clerk to superintendent transportation, Central of Georgia Ry.; April to October, 1911, acting superintendent at Savannah, Ga.; Oct., 1911, to Jan. 7, 1912, trainmaster, same road at Cedartown, Ga.; Jan. 8, 1912, to April 15, 1913, superintendent, Georgia & Florida Ry., Douglas, Ga.; April 15, 1913, to June 1, 1914, superintendent, Atlanta, Birmingham and Atlantic Ry., Manchester, Ga.

M. D. Miller.

M. D. MILLER, who has recently been appointed superintendent of the New York, New Haven and Hartford Railroad Company, was born in Easton, Penna., and received his education in public schools. His first work was performed in the coal mines of the old Lehigh Coal and Navigation Company who later employed him for several years as telegraph operator and agent. In 1889, he went to the New York, and New England Railroad as telegraph operator at East Hartford, Conn., and served in that capacity at various points for about two years and as train dispatcher for about a year. He was then employed as train dispatcher for about a year on what is known as the Central New England Railroad, and in 1893, went to the New Haven Road to fill a similar position on the Stonington Division. In 1899, he was appointed chief despatcher on the same division and in 1901, when a re-arrangement of the division lines was made, he was transferred to New London as chief train dispatcher of the Shore Line Division. In 1908, there was another re-arrangement of the division lines and Mr. Miller was transferred to Providence as chief train dispatcher of the present Providence Division. In December, 1912, he was appointed assistant trainmaster and shortly after became trainmaster from which position he was appointed superintendent on May 25, 1914.

J. R. Kearney.

J. R. KEARNEY has been appointed superintendent of transportation of the Baltimore and Ohio System with headquarters at Baltimore. Mr. Kearney is promoted from the position of superintendent of transportation succeeding the late C. C. Riley, whose death occurred last winter. He was born March 29, 1859, and after attending the public schools at Altoona, Pa., entered railway service in 1876 as a clerk in the car record office of the Pennsylvania Railroad, at Altoona. From March 1, 1880, to May 1, 1881, he was employed in the car record office of the Illinois Central Railroad, and from May to November, 1881, was car accountant of the Illinois Midland Railroad. Returning to the car record office of the Illinois Central, he remained until May 10, 1882, and from that date until May 1, 1889, he was successively clerk and chief clerk of the car record office of the St. Paul, Minneapolis and Manitoba and the Great Northern Railways, at St. Paul. Mr. Kearney resigned from the western road to enter Baltimore and Ohio service as superintendent of car service, which position he filled until he was advanced to superintendent of transportation.

JAS. R. KEARNEY.

Obituary

Alexander Stewart.

ALEXANDER STEWART, general superintendent, motive power and equipment of the Southern Railway, with offices in Washington, D. C., died suddenly at the Hotel Continental in Paris, France, Sunday morning, June 28th, according to a cablegram received in Washington by a local official of the Southern Railway during the afternoon of the above mentioned date, though only bare announcement of the death had been received in Washington up to that night.

ALEXANDER STEWART.

Mr. Stewart had been in bad health for several months and, upon advice of his physicians, on June 16th, accompanied by his wife and only daughter, Miss Eleanor, sailed on the Mauretania for Bad Nauheim, Germany, where it was hoped he would fully regain his health and the cablegram, coming as it did, was a great shock to his many friends and associates.

Mr. Stewart was 46 years old and widely known in the railroad world as one of the most capable and experienced men of his profession.

He was born in Fort Wayne, Ind., and began at an early age to prepare for the railroad business. He was master mechanic of the Union Pacific Railroad, with headquarters at Cheyenne, Wyo., for a number of years, when he accepted a similar position with the Southern Railway with headquarters at Knoxville, Tenn. He was then promoted to general superintendent motive power and equipment with headquarters at Washington and also chairman of the Committee on Mechanical Standards of the Southern Railway and the following affiliated lines: Alabama Great Southern, Cincinnati, New Orleans & Texas Pacific, Mobile & Ohio and Georgia Southern & Florida Railroads, which positions he held for the past ten years and occupied at the time of his death.

In 1910 he was sent as a delegate to the International Railway Congress, which was held at Berne, Switzerland and in 1911 he was elected president of the Master Car Builders' Association, he was also a member of the Master Mechanics' Association. There was no man who was held in higher esteem than Mr. Stewart by his associates as well as those who served under him.

He was widely known in fraternal and club circles. He was a Knight Templar, a 32 degree Mason, a member of the Mystic Shrine, a life member of the Elks and a member of the Commercial Club, the Columbia Country Club and the Anglers' Club of Washington, D. C.

James Campbell, former vice-president of the St. Louis & San Francisco R. R., died at Greenwich, Conn., June 12th, in his sixty-eighth year. At the time of his death he was chairman of the Board of Directors of the St. Louis & San Francisco Company.

Marvin S. Chase, formerly from 1885 to May, 1901, assistant general freight agent of the Lake Shore & Michigan Southern, died at his home in Chicago on June 27th, aged 70 years.

Edward C. Coffey, assistant general freight agent of the Chicago & Alton R. R., at Peoria, Ill., died in that city June 26th.

D. K. Colburn, assistant general manager of the Sunset Central Lines, Houston, Texas, died at Woodhull, Ill., June 3rd at the age of 68. Mr. Colburn had gone to Woodhull, his former home, about a month ago, on account of continued ill health. He had been connected with the Sunset Central Lines since 1889, having been employed first in the bridge department. Before entering the railroad service he had been engaged in bridge building. On the day of his death President W. B. Scott issued an announcement to the officers and employes of the road eulogizing Mr. Colburn's high character.

Frederick Cromwell, formerly a member of the Board of Managers of the Delaware & Hudson Company, and a director of the Atlanta & Charlotte Air Line, the Morris & Essex, the Sixth Avenue Elevated Railroad, the Worcester, Nashua & Rochester and the New York Dock Company, died on June 22nd, at his summer home at Mendham, N. J., at the age of 71.

Walter J. Eddington, general foreman of the Atchison, Topeka & Santa Fe at Corwith, Ill., died at his home in Chicago on May 29th, aged 65 years.

T. H. Goodman, for almost forty years general passenger agent of the Southern Pacific Co., died in San Francisco, June 11th, in the Southern Pacific general hospital. He was one of the pioneers in California railway developments, having entered Southern Pacific service as general passenger agent in 1868, one year before the last spike was driven at Promontory. Mr. Goodman was born at Mount Morris, N. Y., July 12, 1830. In 1850, he started his railroad career as telegraph operator for the Vermont and Massachusetts railroad, advancing to higher positions with various eastern lines, until 1868, when he came to the Southern Pacific. Here he held the position of general passenger agent until his retirement on a pension in 1903.

William Harder, for twenty years general agent of the freight department of the Great Northern at Portland, Ore., died suddenly at his home in the latter city on June 18th, aged 70 years. He had been associated with the Hill lines continuously for 23 years, previous to which time he was assistant traffic manager of the Canadian Pacific at Winnipeg.

Franklin Harvey Head, formerly a director of the Toledo, Peoria & Western, died recently at Maplewood, N. H., at the age of 79.

M. C. Kimball, district freight agent of the Minneapolis, St. Paul & Sault Ste. Marie Ry., at Grand Rapids, Mich., died in that city June 12th, aged 50 years.

Russell Pardee Orcutt, from 1909 to 1911, division engineer of the Rochester Division of the Erie, and a son of George N. Orcutt, assistant to president of that road, died on June 28th, at Hot Springs, Ark., at the age of 29.

Edwin T. Plowman, of Kansas City, Mo., for twenty years superintendent of the dining car and eating-house system of the Atchison, Topeka & Santa Fe Ry., died at Deming, N. M., June ninth.

Martin Montgomery Reynolds, vice-president of the Grand Trunk Ry. system, died at Old Point Comfort, Va., June 17th, aged 52 years. Early in life Mr. Reynolds, who was an American born, was connected with the Mexican National railways, remaining with the same for eleven years. In 1892 he became general auditor for the Central Vermont Ry.; from March, 1896, to April, 1899, he acted as auditor for the receiver of the road and from May, 1899, to September, 1902, he was auditor of the Central Vermont. He returned to the Mexican Railways of Mexico in October, 1902. From April, 1904, to April, 1908, he was comptroller of the Mexican International and the Interoceanic Ry. of Mexico. In 1908 he joined the Grand Trunk Ry. as vice-president, and was later appointed vice-president of the Grand Trunk Pacific and Central Vermont railways.

M. M. Reynolds.

A. C. Sheldon, general agent of the Chicago, Burlington & Quincy R. R., at Portland, Ore., died in that city June 11th, aged 68 years.

Peter Stafford, roadmaster of the Chicago & North Western Ry. at Norfolk, Neb., died June 25th.

The Three R's of the Railroad Business

IN an article which appeared in the Chicago *Herald* of June 22d, Howard Elliott, chairman of the New York, New Haven and Hartford, discusses the financial situation which confronts the railroads and points to the urgency of augmenting their net revenues to meet the great increases in operating expenses which continually confront them. Mr. Elliott remarks that there have been three Rs in the railroad business in the last twenty years, namely, raising wages, raising taxes and reducing rates, and he believes that the point has been reached where, if the Nation wants continued expansion and development of its transportation system, those three Rs cannot go on because there will not be enough money to foot the bills. He considers it full time for the Nation to stop and consider whether it is not putting a greater burden on its railroads than they can bear. The following paragraphs are from his article:

"If there is any one feature offering encouragement in the existing railroad situation I think it lies in the increasing recognition of the important relation the prosperity of the railroads bears to the welfare of the country as a whole, and of the very grave danger there is in the failure of the Governmental agencies to help out. The narrowing of the margin between railroad income and outgo, reflected in the many published statements of earnings, and the effect this has had of stopping railroad improvements, upon which the country's growth depends, has been very generally observed.

"That something must be done to increase the net revenues of the railroads has lately been conceded even by Mr. Brandeis. In his brief presented to the Interstate Commerce Commission at the close of the recent rate hearings he said: 'On the whole, the net income, and net operating revenue of the railroads in Official Classification territory are smaller than is consistent with their assured prosperity and the welfare of the community, and this is notably true of the General Freights Association and other Eastern lines. In view of this fact it is desirable that steps should be taken as promptly as reasonably may be to increase that net revenue.'

"It may be of interest to refer to a very recent utterance of Arthur von Gwinner, managing director of the Deutsche Bank. Herr von Gwinner says: 'American railway rates should not be 3, 4 or 5 per cent higher. They ought to be 25, 35 or 50 per cent higher. Such a state of affairs as exists in American railroads is a deliberate menace to the prosperity of the republic, and because the prosperity of the rest of the world is bound up with that of America, it is a danger to all of us.'

"The duties of American railroads to-day, except paying the bills, are practically directed by Governmental authority. The railroad owners and railroad managers have, to a very large extent, lost control of some of the very important elements of their business. The railroads cannot fix the selling price of their goods, their rates are all fixed for them by State or Federal laws or by municipal organizations, they cannot control their taxes any more, they have little control over rates of pay, and they cannot any more get capital for improvements at 4 per cent, as they used to do.

"The transportation business in the United States is a very big one. It is, second to agriculture, the biggest of all. The last Census showed that there were something over $41,000,000,000 in agriculture, about $19,000,000,000 in manufactures and somewhere between $18,000,000,000 and $20,000,000 in transportation. These three great interests are interwoven together. They must go up or down together. The transportation business must grow and must develop and must be reasonably protected and regulated or it will not be in a position to serve the country and the millions whose daily livelihood depends upon this great business.

"The railroad is never finished, and it cannot stand still; it must go forward or backward, and to go forward means a constant investment every day in the year. In round figures, for every dollar increase of gross earnings for the railroads of the United States as a whole, at least $6 of new capital is required. In New England, where there is a dense population, for every dollar increase in gross earnings the new capital investment must be more than $6.

"For the last four or five years the railroads have been struggling with the higher cost of living, as have individuals. For the year ending June 30, 1914, the New Haven will pay $2,500,000 more than for the year ending June 30, 1910, for the same amount of labor. This is 5 per cent on $50,000,000. That could be used to pay the return on bonds or other forms of indebtedness or for improvements, but it can't be used for both. If the New Haven could have paid the same rates in 1913 as it did in 1903, its payroll would have been $7,200,000 less.

"Coincident with these increasing expenses there has been a fall in freight rates. For example, if the New Haven had received the same average freight rates in 1913 as it received in 1903, it would have had for the same service $1,800,000 more. Here in these two items the increase in the unit price for wages and the decrease in the average unit price of freight, there is a difference of $9,000,000. In other words, the average physical energy expended by the railroad to-day is paid for at a less price than ten years ago, while it costs very much more. In twenty years railroad taxes have increased 225 per cent, or from $34,000,000 to nearly $125,000,000, with no increase in freight rates.

"Then, too, in addition, there are demands from Governmental bodies, involving expenses on the part of the railroad and at the same time taking a great deal of time and physical and mental energy of the officials which is thus diverted from constructive and operative work. The conflict of laws in the States has naturally been an embarrassment to the great public service corporations.

"The railroads have gone pretty nearly to the limit in their efforts to increase their efficiency, although there is always a chance to improve; they are getting heavier engines, engines capable of drawing heavier trains, and heavier rails; managers are trying each year to make a dollar go further than the preceding year, but there is something of a limit to what they can do, and in my own judgment that limit is very nearly reached.

"The cost of producing new railroads connecting important communities is so great that none is likely to be built, and the country must depend upon those now in existence and permit them to expand to meet the increase in business.

"The railroads of the United States have done a wonderful piece of work since the Civil War in practically rebuilding the transportation machine of this country, so that to-day it is the wonder of foreign nations. They have so done it that the capital invested represents but $60,000 per mile, while in England it represents $275,000 per mile and in Germany $114,000 per mile. The average pay of the employes of the railroads is $733 per year, compared with $270 per year in England and $388 per year in Germany. The average charge against the people of the United States for hauling 2,000 pounds one mile is only ¾ of a cent. It is 2 1-3 cents in England and 1½ cents in Germany.

"In other words, the railroads have succeeded here in producing a piece of machinery at a capitalization of $60,000 per mile upon which labor is employed at the rate of $733 per year, and the freight rate is from 1 1-3 to 1½ cents per mile cheaper than in foreign countries. Not only that, but the best appliances, the latest inventions for the safety and comfort of employes, are found on the railroads of this country. Our people demand and our railroads supply better facilities for safe and luxurious travel than in any other country.

"There have been three Rs in the railroad business in the last twenty years—raising wages, raising taxes and reducing rates. It looks now as if we had reached very nearly the parting of the ways and that if the nation wants continued expansion and a development of its railroads those three Rs cannot go on, because there will not be money enough to foot the bills.

"We put up at a railroad crossing a sign and we letter it 'Stop, Look and Listen.' Has not the time come when the nation should stop and see whether it is not putting a greater burden on its transportation agencies than they can bear, and look ahead and see what is needed in order to let the business of this country go on and grow?"

President Delano on the Railway Situation

THE Chicago *Tribune* on June 5 published the following letter from F. A. Delano, president of the Chicago, Indianapolis and Louisville, discussing an editorial which appeared in the *Tribune* on May 31 on the reasons for the present critical condition of the railways.

"If the admirably expressed and tersely put editorial from the Chicago *Tribune* correctly states the facts, and I believe it does, it is time for men who love their country—patriotic, forward-looking men—to do something about it.

"Criticism from all sides has laid bare the facts enumerated, but we need something besides criticism. We are drifting towards government ownership, because those having the greatest share in the present form of ownership are becoming disgusted.

"Under the policy which has existed in this country almost to the present time, railway building was encouraged without regard to needs, intelligent location or earning capacity. Capital was encouraged to build railroads, although in many cases they were so built that they could never be made to pay; and yet even to this day, although we have for 26 years had a commission with large administrative powers, we depend chiefly on competition to determine rates, facilities, time schedules, etc. In mercantile experience or in manufacturing, the unwisely projected or the badly located venture goes to the wall and no longer continues as a menace to other enterprises; but not so a railroad. In only two States of the Union has there been a check placed on useless railroad building, wildcat projects, blackmailing schemes; and yet, the worst practices to-day, practices which the Interstate Commerce Commission could without doubt stop at once by executive or administrative orders, are practices which have crept in and become custom in the battle for existence between these parallel and competing lines.

"As a nation we have attempted to cling to a dual system of regulation on the one hand and unlimited competition on the other; and when railroad men have tried to get together to abolish evil practices—trying to bring about a better enforcement of the law and the spirit of the law— they were none the less enjoined as conspirators.

"But this is neither the time nor the place for criminations and recriminations. The *Tribune* has correctly diagnosed the situation. It is time to arouse ourselves. The Interstate Commerce Commission finds itself overworked and unable to cope with the situation, and it appears to the writer that the time has come for railroad men themselves to take hold. We must do as the bankres have found it necessary to do; they do not depend upon the comptroller of the currency and his examiners to find irregularities—that method was fully tried and found sadly wanting—but they have added, in Chicago and in some other large cities, their own corps of examiners to report to the clearing house.

"Railway officials object to being told that it was their business to cry a halt in the New Haven situation before things had gone too far, and yet all of them will admit that great and incalculable harm has been done to all by the methods of Mr. Mellen. Shall we allow this sort of thing to go on; shall we permit one man, be he insane or unscrupulous, to besmirch the reputations of the remainder? The old employers' guilds of the middle ages were wiser than that. Surely if we have a reputation to sustain we cannot afford to have it ruined. Certain standards of professional ethics must be established and enforced by a committee of such character and authority that its recommendations will carry.

"Such a committee would soon have the confidence of the Interstate Commerce Commission and State authorities, and in time be helpful in curing practices which the Commission probably thinks should be cured, but does not know how to approach. Mr. Brandeis has pointed out serious causes of loss, leaks which should be stopped, rates so low that they amount to special privileges. These are not new discoveries; the serious fact is that they have long been recognized, but under the present method of management there has been no cure for them. What shall we do about it? Shall we try to cure the trouble or shall we allow things to drift, the slow but inevitable drift to government ownership, even though we may foresee in that drift the wreck of our republic?"

FREDERIC A. DELANO.

The Prejudice Against the Railways*

By Fairfax Harrison, President, Southern Railway.

TIME was when it was generally believed that the railroads were making vast profits because they handled millions of revenues. Many there were who purported to disbelieve the statements of the published accounts: comparatively few there were who ever read them. It was enough to know that the figures dealt in millions to believe they were unholy. Then came the regulation of the system of railroad accounts, and with it an appreciation by most intelligent men that accounts kept under the supervision of a government commission were probably reasonably correct, and if they showed, as they did show, that the profits were not large when reduced to the unit of investment represented, or of service performed, then resort must be had elsewhere to find the "Nigger in the woodpile."

The American people are not yet entirely convinced that a railroad is a precarious industry subject to general economic laws, though they are rapidly coming to that appreciation. Because it has been demonstrated that there are thieves and buccaneers in the railway industry, as well as in most other forms of human activity, the popular search has always been to find whither have gone the vast "profits" which are believed by many to be a necessary incident of control of a system of railways. It now seems likely that publicity will demonstrate that this suspicion of all railroad bankers, like the suspicion of unlawful profits of the railroads themselves, is a delusion. The recent publication, by a great banking house in New York, of the details of its accounts with the New Haven Railroad revealed to an astonished world that over many years of the largest financial transactions the bankers' profits averaged seventeen trousand dollars per annum. This may well give us all pause in our preconceived opinions, and, in further aid of clear thinking as to your and my relations to the bankers, I venture to say in conclusion a word as to what these bankers do for you and for me.

Every one of you has a large personal interest in the perfection of the Southern Railway as an instrument of commerce. I myself have a personal ambition and a steady determination to accomplish every year a step towards the realization of your interest in this respect. To do that will require bringing into the South many millions of new money. We cannot hope to earn from our service to the Southern people all that we need to spend on these railroads as fast as we must spend it. Even if we devoted all of our income to that end, and for many years we have so devoted most of it, the agricultural and industrial South is growing so fast that we could not keep up with it, much less keep ahead of it and so help it to grow. Neither is the South itself yet ready to provide the capital by buying our securities. Under the operation of the new income tax law we have had an opportunity, never before possible, to ascertain where and by whom many of our railway securities are held. In this way we have identified a certain representative block of one hundred and ten million dollars of Southern Railway bonds and find that they are held not only in New York but in most of the States of the United States and in many foreign countries and by nearly eleven thousand individuals. Of this total, less than three and a half million dollars is held by seven hundred individuals resident in the States the Southern Railway serves, and sixty per cent of these holdings in the South are in the two cities of Richmond and Louisville. This demonstrates that the money we have secured for the improvement of the Southern Railway in the past has been drawn not from a few rich men, but from an army of investors having at stake an average of not much more than $10,000 apiece, and that the South itself, which has had the benefit of the expenditure of the money in the promotion of an unexampled growth of prosperity, has as yet contributed only three per cent of the capital.

Until the South is prepared to support our capital requirements on a larger scale, we must then look to those who have established channels for the facile distribution of large blocks of securities among a multitude of investors all over the world, and this necessity brings us inevitably to the banking community, to the hated Wall Street, for access to the money we need to spend in the South.

I am glad to be assured that these bankers have realized that the South is the coming part of the United States, and so are confident that they can safely venture their reputation in distributing the securities of Southern Railway Company under present day conditions. I am glad, too, to believe that I have their personal confidence and that they will listen to my recommendations. They have already supplied fifteen million dollars of absolutely new money on such recommendation since the first of January last, and they are ready to supply more for further nmprovement of the Southern Railway plant. All of this is to be spent for the South, most of it in the South, in such ways that eventually it will seep into the accounts of many Southern merchants, just as the proceeds of a large crop eventually reach the merchants. Every one whom I now address has an interest in the disbursement of this money and in what will result in the way of personal convenience and facility for doing business from its expenditure. It is as if a new crop worth fifteen million dollars had been produced in the South this winter. Think what the rejoicing would have been if it had been a crop!

It is, then, of great importance to you and to me and to all the people of the South to have and to hold the confidence of these bankers. The way to accomplish that is simple. I do not propose an investigation of the bankers' business. I do not even propose a new statute to compel them to supply us with money; that might be the simplest way, but it appears that no investigation nor any statute has yet been devised to make a banker invest where he does not want to invest: such a miracle is apparently one of the few things which neither an investigation nor a statute can be made to perform. The bankers do not ask any gratitude, any lip service, for they expect to get their reward in the form of a commission: that is their business. They do not expect to control the railways as the popular imagination pictures them as doing: to make rates and initiate policies affecting the welfare of thousands of people. Never in my personal experience with them, and it has been an intense experience over many years, have I heard a suggestion of that kind of interference, nor have I experienced an attempt to exercise such power through the control of the sources of money.

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*Extracts from an address delivered before the Chamber of Commerce, Lynchburg, Va., April 30, 1914.

In a prosperous community there is only one condition of the bankers' co-operation, but it is an essential one—that the public shall be as fair in the treatment of invested capital as it has demanded that those who control invested capital shall be fair to the public.

Personally, I have no doubt that we in the South shall meet the condition and get all the money we need.

Close Relation of the Railroads to Human Nature

(EXTRACTS FROM A RECENT ADDRESS DELIVERED BY IVY L. LEE, EXECUTIVE ASSISTANT, PENNSYLVANIA RAILROAD, AT A DINNER OF THE AMERICAN RAILWAY GUILD.)

THE railroads are in the midst of a swirling flood of legislation and regulation—most of it punitive and restrictive, little of it constructive and statesmanlike. Last year in forty-two State Legislatures 1,495 bills regulating railroads were introduced, and 230 became law.

Why?

Because the American people have become imbued with certain ideas concerning our railroads, ideas which have a deeply sinister meaning, ideas which have supplied fuel for a flame these courtiers of His Majesty the Crowd have delighted to keep burning.

One of the main reasons we are in the midst of this vortex is that we have failed to take account as railroad men of certain fundamental currents of human nature, which from time immemorial have been made the most of by men who have influenced the action of crowds. Railroad men have been standing aside content to be judged by the machines they were running, not attempting to have themselves regarded as human beings, not making it known that railroads were but composites of human nature. Machines haven't the necessary red blood to arouse multitudes.

The railroad business is very much like, and has always been very much like, every other kind of business. Railroad morality has responded to the general morality of the public, and railroad men have been neither worse nor better than the average run of people at any time.

But somehow or other the public has come to have the idea that three essential evils are imbedded in the railroad business:

1. The first is that there is a vast amount of watered stock on which dividends are being paid. Now there is no essential immorality in the existence of watered stock. It is, after all, a mere business question. It is purely a question of policy as to whether dividends should be permitted to be earned on watered stock. The difference in the effect of watered stock on different publics may be seen in the resulting attitude toward watered stock in this country and in England. In England the Board of Trade reports that the capital obligations of all British railroads are about $6,675,000,000 and the official returns expressly state that nearly $1,000,000,000, or about fifteen per cent is "nominal" capital or "water," and yet in none of the published discussions regarding the railroad problem in England do you observe sinister reference to the "watered" stock.

There is no doubt that the present Federal valuation scheme in this country, which is to be so very expensive, would never have been undertaken if it had not been for the very firm belief on the part of the public that dividends were being paid on watered stock.

2. In the second place, there is a wide-spread feeling that the railroads are ruled from Wall Street, that a small coterie of bankers in alliance with the so-called "money trust" are absorbing huge profits from the people. I do not think you would ever have had two-cent fare laws if it had not been for this wide-spread sentiment. The people in the States felt that by such laws they could retain for the public in their own districts, a portion of the profits which were being absorbed by the absentee owners.

I have an idea the public is to-day persuaded that the railroads are underpaid for carrying the mail, yet acquiescence deliberately in a continuance of a recognized injustice in itself because the people believe, and a large number of Congressmen believe, that by restricting the payment for mail they may save to the people some of the undue profits they feel are earned through other railroad operations by these absentee owners.

3. There is a third idea abroad—that the railroads through their combinations of capital and management exercise undue power over the welfare of the people. A most astounding document was presented to Congress on May 15th by the chairman of the House Committee on Interstate Commerce. Must we not take serious notice when the chairman of one of the most important committees, representing the dominant party in Congress, pronounces a doctrine so amazingly unsound as this:

> "The most vicious thing about all combinations in transportation and all other kinds of business is that while it multiplies the benefits of the few men retained, it dispenses with the services of so many both competent to fill the positions and entitled to the fair emoluments thereof."

On March 29th, Clifford Thorne, chairman of the Iowa Railroad Commission, who, no matter what we may think of his views, undeniably represents a large body of public sentiment, made this statement with reference to newspaper reports of railroad economics:

> "The discharge of 40,000 men simply proves the colossal power of a few men that can throw 40,000 poor families out of the means of daily sustenance."

I believe you will agree with me that these thoughts are in the minds of a large percentage of our population. That such notions are full of error is no matter; they are there, and it is because of their existence that the very foundations of railroad prosperity in this country are being undermined.

That there has been some reason for some of these popular ideas, no one can deny. But that the railroad business as a whole or in the main has been conducted upon unsound lines, that its managers have not been honest, that its results have not contributed mightily to the wonderful progress of this land can be emphatically denied. The extraordinary achievements of our railroads, the wonder, as they are, of the industrial world, constitute a fact of overwhelming significance, a fact embodying the effort, the fidelity, the enterprise, the patriotism of ninety-nine out of every hundred men who have given their service to the public through the railroad since the railroad started to run in this country.

Why is it then that the good in the railroads has been hidden and the bad magnified and distorted out of all proportion? It is because railroad men have neglected the human nature of the situation; it is because loud-tongued politicians have dilated upon the evils while railroad men sat still, attended to their job and said nothing of the good; it is because railroad men have not insisted in and out of season and produced the facts to prove it, that no matter what fly-specks might be pointed out on the wall, the structure itself was safe and solid and something to be proud of.

From the beginning of history popular leaders have taken account of the fact that the people in the mass act upon impulses. Such leaders have not been disposed to exaggerate the intellectuality of mankind at large. If railroad men then are to assume the place to which they are entitled as leaders of the public they must consider these same elements in the psychology of the multitude.

These elements may be briefly described as follows:

1. In the first place crowds do not reason. It is impossible to induce a crowd to proceed toward any proposition on a logical basis. John C. Calhoun proved beyond dispute, as a matter of pure reasoning, that the Southern States had a right to secede, but Wendell Phillips came along and preached the doctrine that the slaves should be freed and that the Union must be preserved. It would have been a logical thing to pay the Southern people for their slaves, but we all know it was not possible to deal with that in that way. You were dealing with crowds.

2. Again crowds are led by symbols and phrases. Joseph Chamberlain, when he was advocating the Boer War, achieved his purpose when he dubbed those opposed to him as "Little Englanders." We know that Bryan, through the creation of that extraordinary phrase "You shall not crucify mankind on a cross of gold," did more to advance the free silver cause than all of the subtle and logical efforts that were ever made to advocate that idea.

3. Success in dealing with crowds, that success we have got to attain if we are to solve the railroad question, rests upon the art of getting believed in. We know that Henry VIII, by his obsequious deference to the forms of law was able to get the English people to believe in him so completely that he was able to do almost anything with them. At the present time the German Empire has, as I see it, the most despotic Government and yet the most progressive and the most contented people in Europe, for the reason that the Emperor of Germany is absolutely believed in by his people. So he may do anything he desires, and the people are glad to have him do it. Does anyone question that Mr. Roosevelt's supreme influence while he was President was due to the fact that the American people absolutely believed in him, believed in the purity of his motives and the elevation of his patriotism? Believing in him as they did, they paid no attention to his blunders or to criticisms of him, however valid.

4. The problem of influencing the people en masse is that of providing leaders who can fertilize the imagination and organize the will of crowds. Moses painted a picture of the promised land, and he induced the Israelites to spend forty years of extraordinary hardship under his leadership. Caesar drew a picture of the conquest of Gaul, and so infused the imagination of the Roman populace that they thrice offered him a crown. Napoleon's uncanny power in France was due to his resourcefulness in the appeal to these same elementary crowd-impulses.

These are some of the elementary main-springs of crowd stimulation. They are factors which statesmen, preachers and soldiers have from time immemorial recognized when they sought to lead peoples. My point is that in working out the railroad problem we must take account of these same principles of crowd psychology.

We must, for example, replace with sound phrases and symbols those symbolic words, symbolic terms and phrases that have gotten into the public mind and created a false impression. We have heard a great deal about "full crew" laws. The labor people were very happy in their selection of that term "full crew." Now, if we had referred to that from the beginning as the "extra crew," it seems to me we would have made considerably more headway than we did.

The phrase, "What the traffic will bear," has done as much to hurt the railroads as any expression ever used. It is scientifically correct, no doubt, but it conveys a most unfortunate suggestion to the popular mind; the thought that the rate is "all the traffic will bear" is a suggestion absolutely contrary to the fact.

We can never be too careful in the terms we use. Some time ago, a certain public service corporation was in great financial difficulties; it could not pay its bond interest. Its skillful president induced its bondholders to agree to a reduction of the rate of interest on the bonds. Their president then announced to the public that there was to be "a readjustment" of the finances of the company. Now "readjustment of finances" is so much better than saying "Your company is bankrupt," and no one ever suggested that his company was bankrupt. It was a matter of terms, and we must be careful of the terms we allow to be lodged in the public mind. There is often talk of "educating the public." Now railroad officers themselves are getting a good deal of very helpful "education." It is not a question of "educating the public"; it is a very real question of understanding the public and having the public understand the railroad man.

What we say to the public, it seems to me, must be with reference to its effect, and not especially with reference to its logical sequence. You cannot argue with the public. To illustrate, Mr. Roosevelt in his speeches gives us holes through which one can drive a coach and four. Mr. Bryan doesn't reason, but he moves multitudes powerfully. Such men and quite legitimately, say what they have to say with a view to its effect, the emotional effect upon the imagination of the people they are seeking to reach.

Major Charles DeLano Hine, Railroad Efficiency Expert

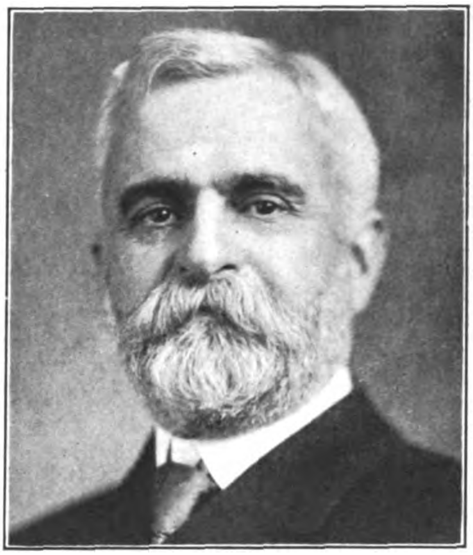
By S. Hunter Walker.

ON my return from Europe the other day, I ran into a solid, smiling, middle-aged young man carefully leading a distinguished-looking woman through the big swinging doorways of the beautiful Washington terminal. The man was Major Charles DeLano Hine, of railway note, and the lady was his mother. They were on their way to a private car which was to convey them to Buffalo, near which city Major Hine is making his headquarters while doing special work for the Erie Railroad. It was characteristic of the Major that he should be smiling, and it was also characteristic of him that while he was living the life of a luxurious bachelor in a private car for the few hours out of the twenty-four which he allows himself for rest, he should wish to share this luxury with his mother.

Major Hine is one of the most interesting men the United States has lately produced. A railroad man he is who, by dint of grit and application and by his own desire to study his chosen profession from the bottom, engineered his way from brakeman on a freight train to senior vice-president and general manager of one of the biggest lines of the Harriman system. Until late last year Major Hine held this position with the Southern Pacific Railway of Mexico and Arizona Eastern Railway. He had taken the post two and a half years before and was, when appointed, the youngest railroad vice-president in this country, if not in the world. During those years he did heroic work upon the seventeen hundred miles he practically controlled. Last year, however, railroad conditions in Mexico became too deplorable for even his irresistible force and sanguine nature and he resigned his southern post. It is the tremendously hard work he did in Mexico and the border lines during this difficult period which has made the Major's hair whiter than is usual in a man yet in his early forties.

Here is a pen picture made by a man who saw Hine in his office in Tucson, Arizona, and on the road shortly before conditions made proper railroading in Mexico impossible:

"Just a door to pass into the office of Vice-President Hine—really the working head of the system. I have seen Major Hine writing a thousand word telegram to a diplomat in Washington; seen him take charge of a muddle of trains and bring them out on good schedule; seen him in the yards giving signals and causing a great equipment movement in ten hours that would ordinarily take five days; seen him hastening over the line in a motor car and stopping at a peon's ranch to really enjoy a meal of menudo, tortillas and thick, black coffee; seen him in charge of a special train carrying munitions of war to a point of need—and he is always all there. His office, though, might seem to one who does not know a place where a social official played at business—no stenographer, no table littered with reports, papers, telegrams, paraphernalia; for Major Hine is the embodiment of system, and he is a past master in its actual exposition."



MAJOR CHARLES D. HINE.

It was a great climatic change from Mexico and Arizona to Canada, and winter an unpleasant time to make it. But Major Hine did not mind that, and when he was asked to take a three months' term of work as Consulting Engineer and Efficiency Expert for the Canadian Northern Railway during the survey of its new road, he immediately accepted it. His sister, in Vienna, Virginia, permits me to quote from a letter he wrote to his family there while he was roughing it in the Northwest last winter:

"I left Winnipeg on sleeper Thursday night, 6th, reached Edmonton Saturday morning and went off on a construction train with General Superintendent W. A. Brown, to go over the new line west. We reached the end of steel, 241 miles, Sunday night, only eleven miles from the Yellowhead Pass, the summit of the Rocky Mountains. Monday morning we took a train on the Grand Trunk Pacific, which parallels the Canadian Northern for many miles. We came through the Yellowhead Pass and crossed the Continental Divide on an easy grade at an elevation of only 3,700 feet. Forty-nine miles west of the Pass, where the two lines diverge, we got off at a C. N. R. grading camp. Here I found it possible to follow the grading west all the way through. A horse was available. My bag was back on Mr. Brown's car. At the contractor's store I got a sweater, a rubber coat and a pair of arctics. After dinner, to the amazement of Mr. Brown, I set off on horseback accompanied by two grading walking bosses. After nearly twenty miles' riding, I slept in a tent in an engineers' camp. Tuesday brought over twenty-five miles of hard riding over icy and snowy roads with dinner in a grading camp.

"Wednesday, Division Engineer Millidge and I followed the Thompson River five miles on horseback, and then below the rapids I took his supply canoe, manned by two good boatmen, one an Indian half-breed. The canoe carried coal oil, canned goods and corn flakes for the down river engineers, all of whom have good log houses. We made only seven miles to the camp of Engineer Stirrett so as to make an early start Thursday, when we paddled thirty-five miles through icy water, stopping for dinner at the camp of Engineer Morrison, only three miles above where the canoes stop on account of rapids below.

"Friday morning, I walked alone thirteen miles, three of which were over a miserable trail. After dinner at a grading camp I left on the camp doctor's old horse and rode twenty-seven miles, the last ten over a rough frozen road. I reached camp at mile 343 from Puget Sound at 8.40 P. M., with a record broken for one day's travel along the ever-present Thompson. The enthusiastic youngsters got me a hot supper and prepared a good bed. Saturday morning, I was as good as new and in the afternoon drove fourteen miles in a spring wagon to engineers' camp at mile 329, where I spent the night and left this morning before breakfast on the twice a week supply construction train and arrived at Kamloops, 86 miles, at 4 P. M. I leave over the C. P. R. to-night and unless delayed by a landslide reported west should be in Vancouver at 8.30 A. M.

"This trip was harder than last year's crossing the Continental Divide between Guadalajara and Tepic on muleback. I believe on the whole, I prefer to follow the rails than precede them."

Major Hine is the creator of the Unit System for railroads, which was introduced into nearly all of the Harriman lines at a saving of hundreds of thousands of dollars annually to that system. The Unit System has been used in whole or in part on many of the railways throughout this country, as well as in Canada and on some of the railways in South Africa.

This system, Major Hine succinctly describes as "a simplification of ways and means." It is largely a process of elimination. It does away with archaic methods, annihilates worthless red tape and roundabout ways, unnecessary correspondence and records. It condenses work and workers and cuts out "dry rot" generally with the ruthless hand of an iconoclast of business traditions.

The Major is a graduate of the United States Military Academy, although his title was gained as a volunteer officer of the Cuban Army. He is a lawyer besides and also the author of several works. His two latest books are: "Modern Organization" and "Letters from an Old Railway Official." As a writer and as a public speaker—for he is often called upon to express his views on organization in general and railroad organization in particular—he is lucid in diction and strikingly epigrammatic in style. Here are a few dicta from his late spoken and written words:

Organization is a necessity and not an accident.

True inspection is as open as the day, as welcome as the evening.

Specialization is the lazy man's excuse for passing the work up to the other man.

A railroad track's second winter is often like a baby's second summer, a period of relative distress.

The corollary of specialization is centralization. The corollary of over-specialization is over-centralization.

Perhaps the best natural check against corporation over-specialization is rotation of function.

Efficiency too often is measured by book balances and statistical reports rather than by expert inspection of actual conditions and performances.

The great problem in organization is to develop, under modern conditions, the old-time feeling of individual responsibility. Specialization running rampant is often responsible for the creation of unnecessary departments.

Since history repeats itself in organization as elsewhere, the gradual evolution in industry will be, as shown by the experience of the ages in armies and navies, to insist upon periodical rotation between the staff duties of inspection and the line duties of performance.

Training Office Railroad Workers

By J. S. Donaldson,

Assistant Comptroller, Penna. R. R. Co.

THE creation of an organization to conduct a work of such vast importance as Railroad Accounting is fundamentally and necessarily based upon lines of desire to obtain accuracy in execution, and therefore the foundation must be built in accordance with correct principles.

To be an efficient clerk requires that a person should be a fair penman, able to write with reasonable rapidity, able to operate the various accounting mechanical devices and have a knowledge of stenography; he should be able to add, subtract, multiply and divide accurately; he should have the temperament which will enable him to apply himself continually for many hours upon details; he should have a certain acuteness that will enable him to judge quickly where errors exist in accounts; and should also be interested in methods to improve the systems or methods of record keeping.

An accountant does not require the same skill of hand and readiness of performance as a clerk, but must be able to supervise and direct the work of the clerk; he should have a sufficient knowledge of the principles of accountancy, business methods, and general practices to qualify him to apply them to any line of business; and he should be competent to devise such a system of reports and record keeping as will enable him to place before the management the results obtained from the business. Many expert accountants are, or have been, bookkeepers, although, through lack of practice in the actual keeping of books, they may not have some of the manual and mental dexterity required to perform the work accurately and quickly, the previous training is necessary to enable him to originate methods and to understand books and accounts. The close study now required of Railroad Accountants of rules, regulations, classification of accounts, preparation of reports to Commissions, State and Federal, and the laws and rulings governing the application of transportation charges, as well as Internal Revenue laws, and tax laws, might now properly classify them as Accountants at Law.

Organization and method is the basic principle of success in accounting as well as all other work. Many of the difficulties and hardships imposed on clerks are created and continue to exist through lack of proper consideration of the methods in force. Simplicity does not attend them, and consideration is not given to the elimination of the elements which tend to create more work than is necessary to produce the results desired. Attention should be given to the elimination of every operation which invites inaccuracy and fails to accomplish all that may be done mechanically so as to save the fatigue incident to the analysis or summarizing of figures, which is so manifest in accounting work, by mental failures. This interest on the part of the employer in the employe will, in some instances, bring forth criticism and antagonism from those it is intended to benefit. One of the conditions of success is the ability to withstand criticism without resentment, and encouragement will follow as an after reward.

In the introduction of the use of new methods, especially of mechanical appliances, a spirit of indifference will, as a rule, confront you from those accustomed to other methods, and it will take some little time to impress the employe with the fact that the advantages are largely his. The results of our system are that we have been able to cut out overtime, relieve the mental strain and make life decidedly more enjoyable, while the Company will have eventually a more efficient service at less cost. A change in method naturally calls for a temporary additional expense and disarrangement of affairs, but if the results are for the betterment of conditions, we should not hesitate to make the changes. Much of the heretofore expense in accounting is saved in the use of mechanical devices by reason of the avoidance of errors that are quite common in mental methods, and involve in computation, or where a large volume of figures are concerned, a complete rechecking.

Employes should realize that improvements in accounting work by the use of mechanical appliances mean a furtherance of effort to preserve the mentality of the individual. This necessarily results in less absence from duty and a prolongation of life. The physical improvement insures better service and the elimination of the too common nervous ailments caused by excessive worry due to failure to balance accounts, and make returns on schedule time.

The greatest difficulty in successful accounting is the constant inaccuracies which creep into work performed by those who are incompetent, careless, or who work under pressure in the preparation of records or reports, which, because of the ramifications of railroad accounting, requires the results so obtained to be used in various ways, and thus causes, in the subsequent rectification of these errors, more labor and cost than that involved in the original production. This, unfortunately, has been true in a very marked degree in the past, but owing to the more general use of mechanical calculating devices, or prepared tables of results, curtailment of mistakes is taking place to a large degree, and by the use of typewriters in waybilling it is possible to do more expeditious work and meet the freight train schedules, especially as there is no press-copying involved. The advance in this respect is parallel to the adoption of automatic signalling devices as against hand methods, in preventing errors in train movements.

Following out what is thought to be a correct principle, all persons desiring to enter the employ of the Accounting Department of the Pennsylvania Railroad Company are required to undergo a mathematical and physical examination. Applications are only considered from among boys ranging, as a rule, from sixteen to eighteen years of age. Those who satisfactorily pass the test examinations are, as the occasion demands, tendered an opportunity to enter what is known as the apprentice school, which is conducted with the object in view of giving the boy the benefit of a correct fundamental education at the hands of those representatives of the various offices in the Accounting Department who are the most efficient in their respective lines, so that the old practice of the junior clerk being employed, assigned to a desk and left to his own development disappears.

By the new arrangement the boy is taught the most improved methods in the application of mathematics and stenography, the proper manner in which to operate typewriters, and calculating, tabulating and sorting devices of all descriptions, the geography of the country through which the railroad operates and generally of other territory beyond, the organization of the company and its officials, the station numbers and names, junctions, divisions and foreign line connections, the manuals containing instructions for the conduct of the business and other features, so that the results are a correct, systematic and efficient beginning, with the various tutors acting as the final determinators (each without consultation with the other by separate designation of their own conclusion) of the fitness of the candidate to be graduated from the school to regular employment or advised of failure to meet the requirements to finally enter the service and at the latter time his school connection is also severed. The school is conducted with a head clerk in continuous charge on the same principle as any commercial school, being specialized, however, as to railroad work and having the benefit of instruction from practical men each devoting an hour or two a week, so as to vary the lines of instruction on each day and give some time for its practical application.

Entrance is at a nominal salary paid by the Company, with hours similar to school hours, and the term ranging from three to six months, sufficient to have the mind and the hands of the student trained in the correct direction, instead of being, as under the old principles, allowed to follow whatever manner of work performance might occur to him and without respect to the future failure that would arise from lack of direct and interested supervision of experts, no one under the old method having any time to devote to this feature, and also perform the daily required duties. The beneficial results in a gain of time, efficiency and cost is apparent by actual test. Studies of class features are continued after leaving the direct class work by the requirement that there shall be submitted from time to time for examinaion exhibits of the accomplishments of the younger clerks and weekly an hour or two are devoted to advanced work, which classes are attended by a limited number who desire to specialize in selected branches .

The regular forces of the Accounting Department of the Pennsylvania Railroad Company are organized on the basis of an endeavor to bring about a proper distribution of the work to be performed and to divide the responsibility and supervision so as to make as many as possible of the clerks feel that they are a part of the institution charged with an interest in producing results, with consequent development of their ability, thus offering the best opportunity to decide upon those who are the better entitled to promotion on account of their demonstrated proficiency in carrying the limited responsibility that is first placed upon them. The practice is also to keep continuously shifting the clerks and others higher in authority so as to make them generally acquainted with the various branches of the work, and in this manner have the benefit of as many minds as possible on the same character of work thus bringing to the development of the methods the broadest consideration possible, and in the recommendation of those exercising supervision bringing out the expressed opinion of more than one as to the worth and ability of the clerk. This has the tendency to relieve the monotony which, as a rule, accompanies clerical duties and prevents the active mind from becoming inactive and narrow for want of variation, and further avoids a failure of development in method which in many instances comes from inertia or continuance in a fixed groove.

This practice brings to the management, men of experience in the whole field of its accounting work adding a strength to the organization for the reason that knowing the effect the performance of one line of work has on another naturally brings a more intelligent treatment on the part in hand, and further makes the organization such that it is not dependable upon any one individual for the knowledge of any general part of its affairs.

The forces are assigned in squads, of as nearly ten clerks as possible, including a head clerk in charge, who is a member of the squad. Each squad is assigned certain work to perform which is distributed among the members, the head clerk as a working member being responsible to see that proper performance takes place and that the rules of discipline are enforced, with the first clerk acting in his absence.

Three squads constitute a company in charge of an Assistant Chief Clerk, who is a working member of the body, and has charge of the special and more intricate questions pertaining to and involved in the work and is charged with the responsibility of handling infractions of discipline when too serious and beyond the control of the head clerk and with the duty of equalizing the work between squads so as to get the full accomplishment without pressure being too heavy at one point and too light at another. The oldest head clerk acts for the Assistant Chief Clerk in his absence. Two companies constitute a force in charge of a Chief Clerk whose duties are to supervise in such a way as to determine and enforce the most efficient methods of handling the work, bring the assistants in daily conference, and review all matters needing general attention. The First Assistant or the Second Assistant acts in his absence.

Two or more forces are in charge of a Chief Accountant who supervises and adjusts matters between the forces.

The Chief Accountants report to and receive their instructions from the Auditor or Assistant Auditor.

Before any promotions are made clerks and those of higher positions are graded under a system of efficiency reports and the first of each class before being promoted to a higher position other than that of clerk must be recommended by the Auditor and appear before the Comptroller, Deputy, and Assistant for oral examination and determination on their part as to his fitness to be given a trial in the higher position and subsequently for final appointment.

Salaries are fixed for the positions of a grade higher than clerk, and those of clerks are divided into classes of multiples of five dollars to which promotion is made after the expiration of periods of service and satisfactory performance to warrant it.

The Department as constituted officially is as follows:

Comptroller aided by a Deputy and an Assistant Comptroller.

In general charge of the Department, with specific performance in their offices of the audit of Treasury Department transactions, the preparation of all statistical reports issued by the Company, and the compilation of data bearing on rate cases before the various Federal and State Commissions, and supervision by traveling representatives over accounting features in the various offices and agencies throughout the system.

The Comptroller is further aided by:

Auditor Passenger Traffic and Assistant, in charge of auditing passenger traffic accounts.

Auditor Merchandise Traffic and Assistant, in charge of auditing merchandise freight traffic accounts.

Auditor Coal Traffic and Assistant, in charge of auditing coal and coke traffic accounts.

Auditor of Miscellaneous Accounts and Assistant, in charge of auditing miscellaneous traffic accounts and settlements.

Auditor Disbursements and Assistant, in charge of auditing disbursements for wages, and for material made by voucher.

The working forces number approximately 1800.

In the face of the many erroneous statements which are made of failure and lack of efficiency in railroad work, it may be interesting to recite that in the Accounting Department a "roster chart" is the means by which a close check is made upon the performance of each clerk. The arrangement is such that it is known how many hours monthly are taken by each clerk to perform each specific feature of their duties, and also the total time involved in the completion of each specific class of work by the several clerks engaged on a class. This indicates where there is necessity for an analysis of methods, so as to determine whether improvement can be made, this result being obtained by the official in charge personally observing the actual performance and ordering changes. Very close attention is given to the economical use of materials, forms, and supplies, and to accomplish this a committee comprised of official representatives from the various Auditors' Offices meet weekly to approve and pass upon any changes in forms, blanks or supplies. The various forms of economy practiced in the use of stationery are the equal of those prevailing in any commercial or government practice.

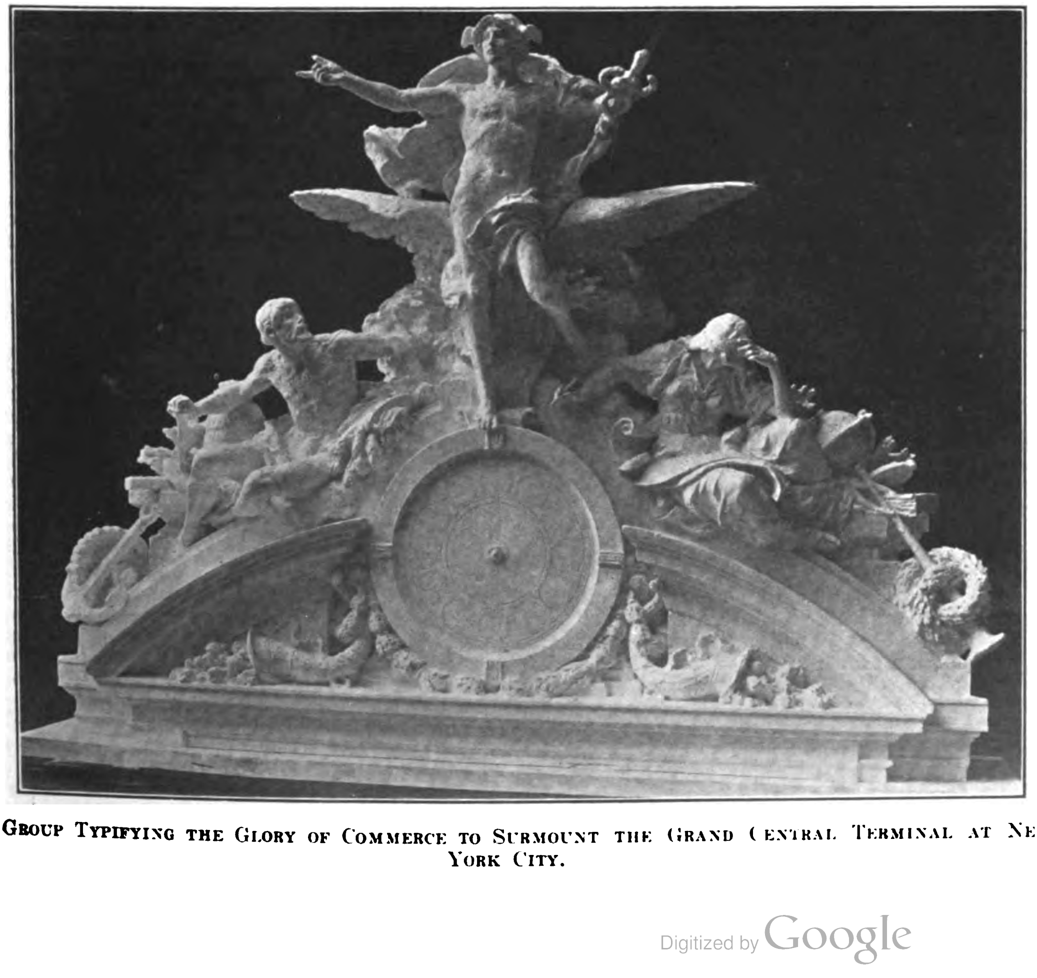
Conferences are held during the month between the Auditors and their Chief Clerks and Assistants, reviewing such matters as are suggested for consideration as improvements in methods, and the Head Clerks are daily brought together with their Chief Clerks and Assistants to review the previous and present days' affairs, and the clerks are invited to offer and submit suggestions which must be considered and submitted to the Auditor with recommendations (affirmative or negative) for final decision. All employes are subjected to standard rules of discipline with the right of direct appeal to the head of the Department, without prejudice.

The Monumental Sculptural Group Surmounting Grand Central Terminal

ARCHITECTURE being a reasoned art, for any specific purpose there should be precedent and tradition—every motive and element should have its reason for being,and in all compositions, no matter how simple, the elements must explain themselves and justify their presence.

In ancient times the entrance to the city was through an opening in the walls or fortifications. This portal was usually decorated and elaborated into an Arch of Triumph, erected to some naval or military victory or to the glory of some great personage.

The city of to-day has no walls surrounding that may serve, by elaboration, as a pretext to such glorifications, but none the less, the gateway must exist, and in the case of New York and other cities, it is through a tunnel which



GROUP TYPIFYING THE GLORY OF COMMERCE TO SURMOUNT THE GRAND CENTRAL TERMINAL AT NEW YORK CITY.

discharges the human flow in the very center of the town.

Such is the Grand Central Terminal, and the motive of its facade is an attempt to offer a tribute to the glory of commerce as exemplified by that institution. The architectural composition consists of three great portals crowned by a sculptural group, the whole to stand as a monument to the glory of commerce as typified by Mercury, supported by physical and mental energy—Hercules and Minerva.

It is this monumental group of heroic proportions that the workmen will soon finish placing in position.

The group was designed by Jules Coutan, a member of the French Institute and by many regarded as the greatest decorative sculptor of the age in work in which the human figure plays a part.

Mr. Coutan was three years in creating the design and making the working model, which is one-fourth the size of the completed group. When commissioned to do the work he was asked to expedite it so that the group might be ready when the terminal was opened, but he declined to be hurried, saying he was putting his reputation in the work and it must be the best of which he was capable. The result speaks for itself.

The execution of the group from Coutan's working models was done by William Bradley and Sons under the direction of Silvan Saligres, who modeled and executed all the ornamentation on Grand Central Terminal excepting the Coutan group.

The group is carved in Indiana limestone and weighs 1,500 tons. It is 60 feet long and 50 feet high. Mercury, the god of Speed and the messenger of Jupiter, is the central and dominant figure. He is 27 feet high. Sharing the center of the group with him is the eagle with outspread wings measuring 35 feet from tip to tip or more than the distance from curb to curb of an ordinary street.

At the right of Mercury is the massive figure of Hercules, typifying physical energy and industry; a very life-like figure with a serious cast of countenance and wonderfully developed muscles and surrounded by the symbols of industry—the wheel, the anvil, the sickle and the anchor.

The other figure in this wonderful group is Minerva, in thoughtful attitude symbolizing intelligence or mental energy. Near her are the compass, globe, book and pencil.

The chiseling and setting of the enormous blocks of stone making up the group were no small achievement. The stone from which the head of Minerva was carved weighed 20 tons, and many other pieces were of equal or greater weight.

It is no child's play to handle stones of that weight and magnitude and follow the model correctly. Enormously powerful electric cranes were used in the workshop where the stones were carved and a specially constructed derrick at Grand Central Terminal was required to place them in position.

Below the center of the group and forming a part of the general scheme will be a clock, the dial of which will be 13 feet in diameter.

The Railroad Conquest in Africa

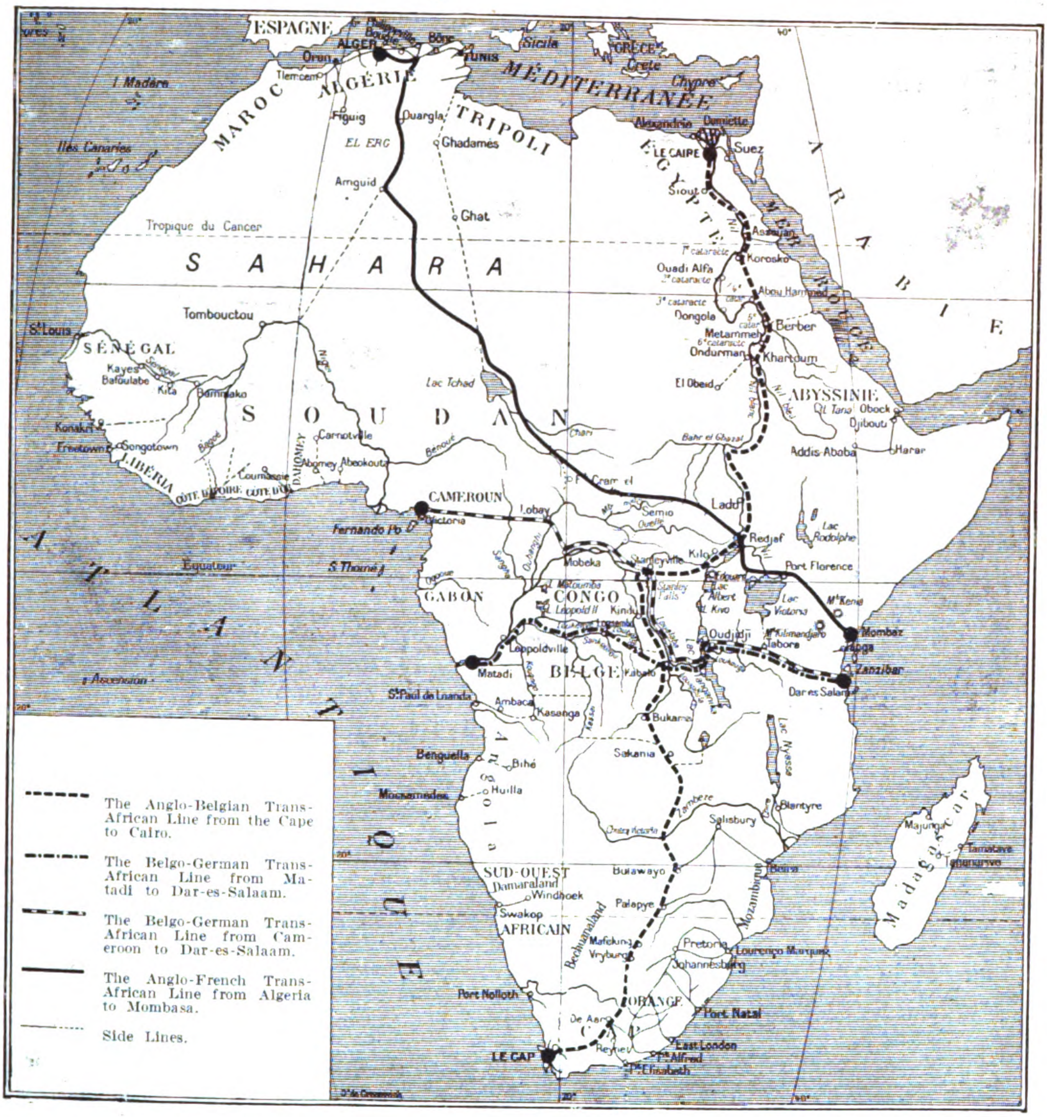
UNDER the above caption, the "American Review of Reviews" for July, published an interesting article by Louis R. Freeman which goes more thoroughly into railway developments in Africa than anything heretofore published. One of the most striking things about the railway developments on that continent is the comparative evenness with which the various lines are, and will be distributed. At the present time nine-tenths of the 25,000 miles already constructed, are at the northern and southern ends of the continent. It is also true, as the accompanying map illustrates, that upon the entire African coast line, there are only two or three intervals of over 500 miles in all its 20000 miles and more of length which are not marked by at least the beginnings of a railway and most of these lines are going somewheres either pushing on through the desert or jungle to meet another advancing rail head, five hundred, a thousand or two thousand miles away, or reaching out to connect with some navigable stretch of river which has steamer connection at a distant coast.

Mr. Freeman states that Africa is building close to two thousand miles of railways at the present time and that in all probability will in another five years be adding new lines at a 50 or 100 per cent greater rate. While it is never likely to have the great aggregate mileages of Europe, Asia and North America, it is not improbable, at the present rate of progress, that it will have one and possibly two north and south lines traversing its whole length before any such consummation is affected in Asia, Australia or either of the two Americas. Nine-tenths of the railway mileage of Africa, at the present time, is included in the British systems of the Nile Valley and South Africa and the branch systems of Algeria and Tunisia. The work of the Germans which ranks third in magnitude, is confined to ambitious conditions in the jungle of the east and west coasts of the tropics. The following photographs which are published through the courtesy of the "American Review of Reviews" give an excellent idea of some of the leading characteristics of the African railways.

In discussing railway developments in South Africa, Mr. Freeman has the following in part to say:

"The South African railway system is by far the most extensive and important on the continent; indeed, the three administrations—the Cape Government, the Central South African (representing the Transvaal and Free State Governments), and the Natal Government—taken over and consolidated under state management at the time of the South African Union in 1910, form one of the largest systems under the direction of a single man in the world. The work of W. W. Hoy in bringing order out of the South African railway chaos and making the lines under his management the leading factor in the development of their tributary territory is worthy of comparison with that of James J. Hill in the American Northwest. The fact that the states of the South African Union—hitherto very backward in agricultural development—have more than doubled their production of fruits and grains in the last five years is the best commentary on the success of the regenerative movement led by the railway.

"South African railway construction was in-


The Anglo-Belgian Trans-African Line from the Cape to Cairo.
The Belgo-German Trans-African Line from Matadi to Dar-es-Salaam.
The Belgo-German Trans-African Line from Cameroon to Dar-es-Salaam.
The Anglo-French Trans-African Line from Algeria to Mombasa.
Side Lines.
ESPAGNE
MÉDITERRANÉE
MAROC
ALGÉRIE
TRIPOLI
SAHARA
SOUDAN
EGYPTE
ARABIE
ABYSSINIE
CONGO BELGE
CAMEROUN
GABON
SÉNÉGAL
LIBERIA
ATLANTIQUE
SUD-OUEST AFRICAIN
ORANGE
Madagascar
Tropique du Cancer
Equateur
ALGER
TUNIS
LE CAIRE
Khartoum
Redjaf
Mombaz
Zanzibar
Dar es Salaam
Matadi
Léopoldville
Stanleyville
Bukama
Salisbury
Bulawayo
Mafeking
Vryburg
Johannesburg
Pretoria
LE CAP

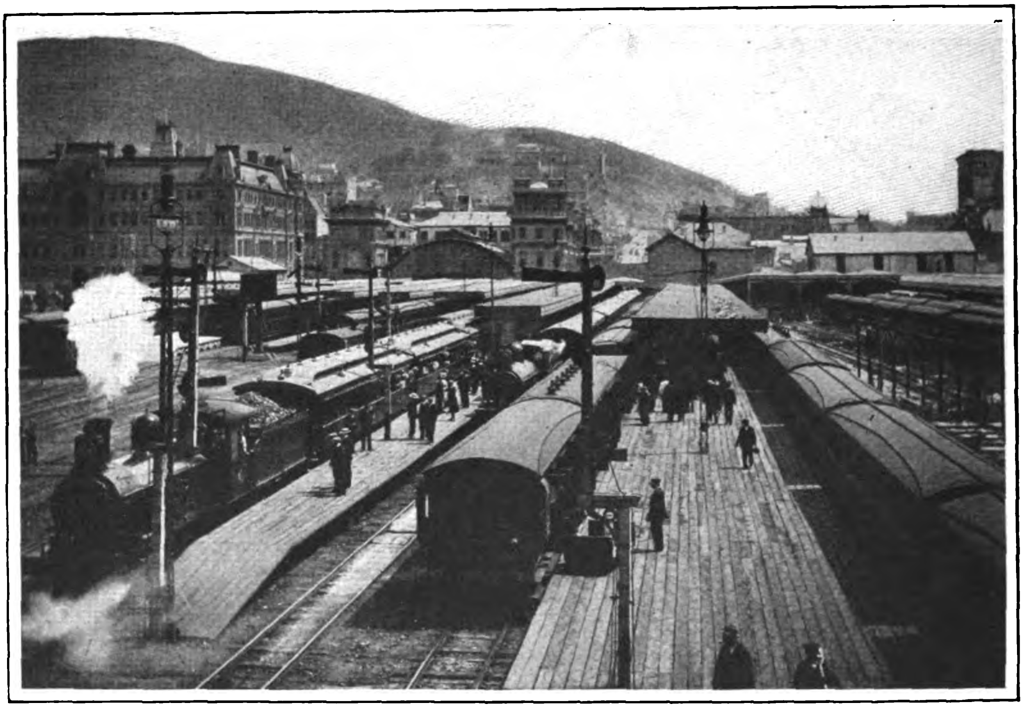
Modern Africa as the Railroad is Opening it Up.

(This map is reproduced from a more elaborate one compiled on a basis of official documents gathered by the Mouvement Geographique, of Brussels.)

augurated with the beginning of a sixty-three-mile line from Cape Town to Wellington in 1857. Intermittent development continued until 1872, when the Cape Colony Government took over all of the completed lines. Active railway extension may be said to date from that time. Early South African construction was almost entirely directed toward one objective—the great mining and consuming centers in the north. First Kimberley and its diamonds, was the goal; then the Rand, with its gold. Kimberley was the magnet which deflected the western line through the Karoo, the most arid district in South Africa, instead of across the fertile regions to the southwest. Kimberley was reached in 1884, and a few years later, following the discovery of gold on the Rand, lines were built to connect with those constructed by the Boers in the Transvaal and Orange Free State. The main part of the Transvaal business, however, was done by a line that had been pushed through Natal from Durban, which offered a much shorter route to the coast.

"These three systems all figured prominently in the Boer War, the Africanders for some time holding not only their own lines in the Transvaal and Orange Free State, but considerable lengths of the Natal and Cape Colony lines as well. The control of rail transportation was the fiercest object of contention during this sanguinary struggle, as a result of which such portions of the lines as fell within the war zone were greatly damaged, principally through the dynamiting of bridges and culverts. Practically all of this part of the South African system has been rebuilt throughout since the war.

"Generally speaking, all of the South African railways, like most pioneering ventures, were run at a loss during their earlier years. With the tremendous wave of advancement and pros-

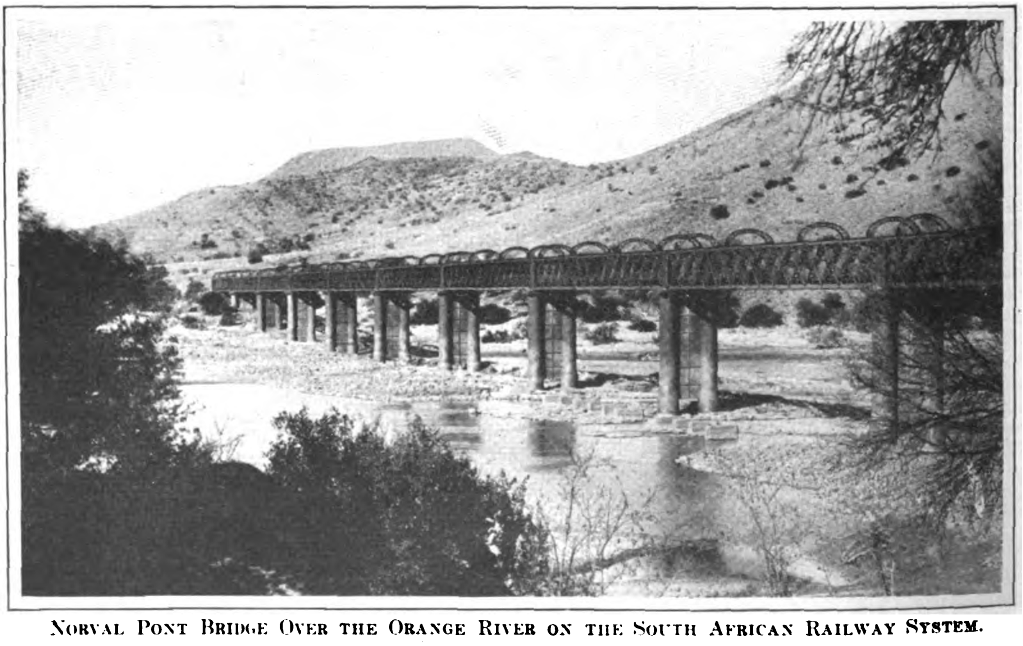


THE STATION AT CAPE TOWN ON THE SOUTH AFRICAN RAILWAY.

perity which swept over the country following the discovery of gold on the Rand, this was changed, and up to the time of the war—1899, 1900,—all of the roads, in addition to financing heavy extensions, paid handsome dividends. The heavy slump which followed the war was responsible for several lean years for the railways, and it is only since about 1907 that they have been paying as well as in the '90s.

"The most striking fact in connection with the growth of the South African railways has been the way in which their development has followed that of the mines. It was the locality of the gold and the diamonds which dictated the route of the trunk lines, and it has been the carrying of supplies to the mining centers which has been the main source of the prosperity these railways have enjoyed for many years.

"Active extension was kept up by all of the South African systems during both good and bad years, so that in 1910, when they were consolidated at the time of the formation of the



NORVAL PONT BRIDGE OVER THE ORANGE RIVER ON THE SOUTH AFRICAN RAILWAY SYSTEM.

THE RAILWAY STATION AT ORAN, ALGERIA—ONE OF THE FRENCH LINES.

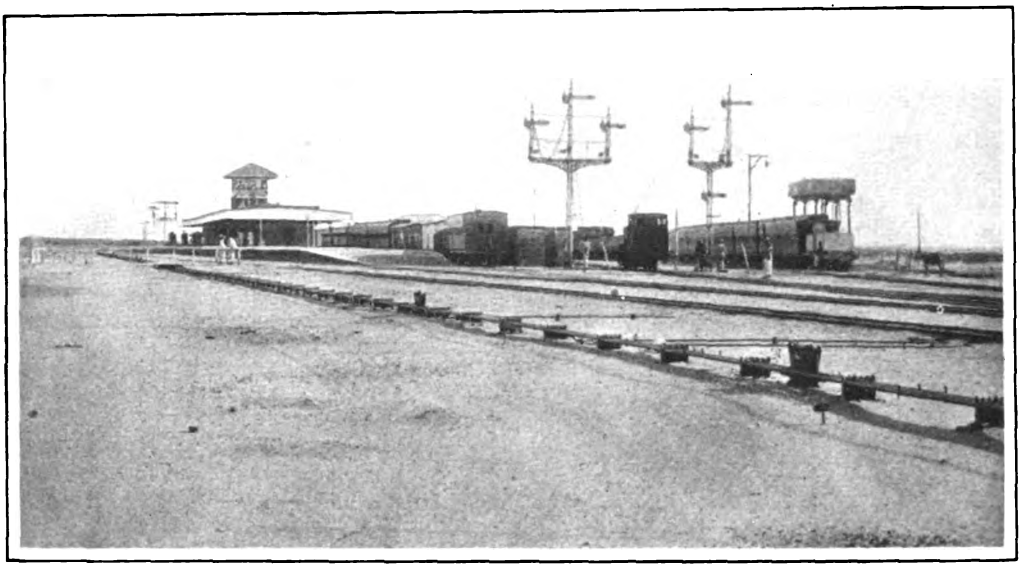
(All travelers are impressed with the way the character of the architecture fits in with the landscape. In the front is seen a section of one of those famous macadamized highways with which the French have networked all North Africa.)

Union of South Africa, they had a total of over 7,000 miles open to traffic. Of this, 3,329 miles were in Cape Colony, 998 in Natal, 1,728 in the Transvaal and 987 in the Orange Free State. The combined systems at that time represented a total expenditure of over $225,000,000. Since 1910 from one to two hundred miles of new line have been opened each year, at an increased capital expenditure of from $12,000,000 to $20,000,000 annually. The total mileage at the present time is very close to 8,000, with construction in progress or sanctioned that will bring the aggregate up to 10,000 miles within a very few years. This does not include the 3,000 miles of the Rhodesian system, which will be referred to presently.

"What is generally spoken of as standard gauge throughout the world—4 ft. 8½ in.— was used in only one or two of the pioneer lines in South Africa. After that the expense of construction in the unpopulated desert districts and through the mountains indicated a narrower gauge as desirable, and that of 3 ft. 6 in. was adopted. Ninety-five per cent of the present construction is of this gauge, with the remainder —less than 500 miles—of a 2 ft. width. The construction is of a very high class. Rails of from sixty to ninety pounds to the yard are used, and ties on much of the new line are of steel. Ties, indeed, on account of the scarcity of wood in the country, form one of the serious problems, and it is interesting to note that extensive plantations—similar to those set out by two of the California railroads—are now being tried to remedy this deficiency. Stations are generally of brick and concrete, bridges and culverts of steel and concrete, and the ballasting of crushed rock.

"The proportion of natives employed on the South African railways is remarkably small for a system in a country whose principal population is non-Caucasian, a circumstance due, doubtless, to the low mental capacity of the Kaffir. In China and India—and to a somewhat lesser extent even in Egypt and Algeria—supervision and technical work only are in the hands of whites, from 95 to 98 per cent of the employes of all lines in these countries being native. In South Africa, the percentage is, roughly, 45 per cent

A THIRD-CLASS WAITING-ROOM IN THE ORAN STATION SHOWN ABOVE.



ATBARA JUNCTION: A TYPICAL DESERT STATION IN THE SUDAN.

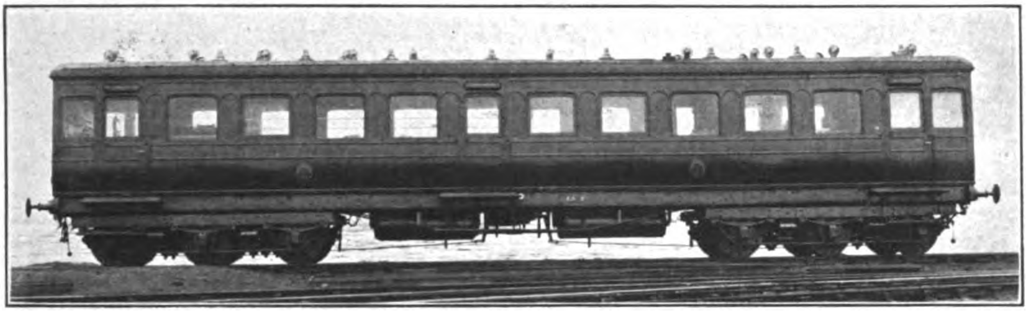
black and 55 per cent white. At the time of the consolidation of the systems in 1910 the exact figures were: White, 26,331; black and East Indian, 21,631. Since then each class has been added to at the rate of about 3,000 a year, with the relative proportion of natives and East Indians gradually increasing. This increase may have something to do with the labor unrest which, centering about the railways, has stirred South Africa for the last year."

PUSHING THE FRENCH ALGERIAN RAILWAY SOUTHWARD THROUGH THE DESERT.

British Enginemen's New Instruction Van

From Our London Correspondent.

SPECIAL interest has been aroused in connection with the new enginemen's instruction van recently put into service by the Great Eastern Railway Company of Great Britain, the company which now has an American general manager in the person of H. W. Thornton. As a consequence of the increased service which is being demanded from locomotives year after year, the simple type is gradually being superseded by larger, heavier, and more powerful machines, with a corresponding increase in the number and complication of their



Great Eastern Railway Company of England Engineer's Instruction Van.

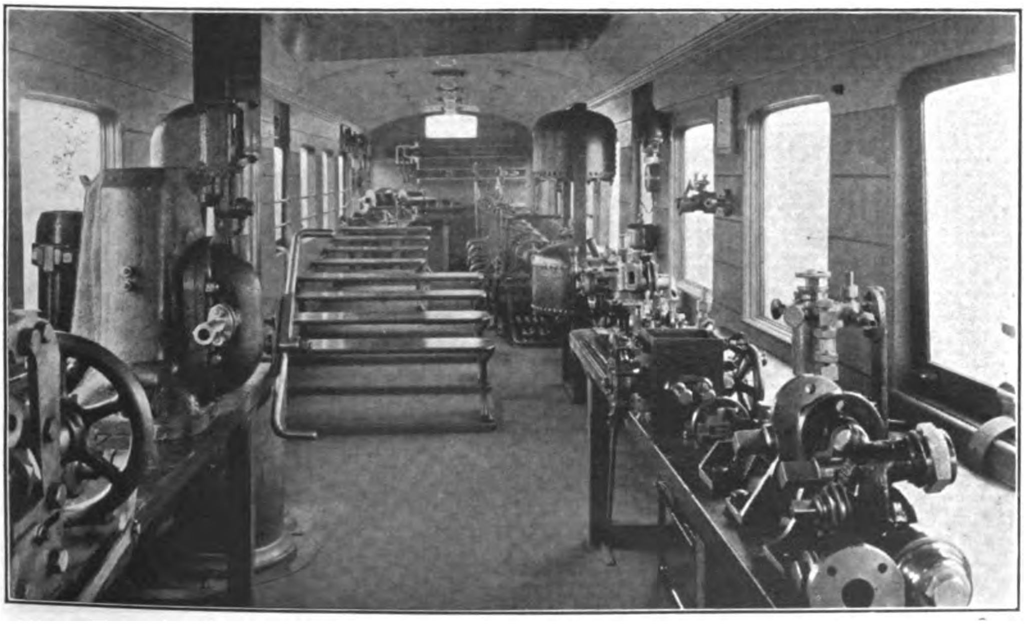
working parts. Heavier valve motions have been mastered by the air pressure reversing gear, the need for economy of coal and for the best results from a given grate area under varying conditions has been met by the variable blast pipe and the superheater, and the use of superheated steam has in its turn brought with it the need for more efficient lubrication.

All these pieces of apparatus demand careful and intelligent handling, and the best results can only be obtained from them by men who understand their construction and the principles underlying their action. This knowledge also enables the driver to detect more readily any defects while the engine is in steam and results in a saving of time and needless trouble to the running shed staff, when, for example, the exact position of a blow in the air reversing gear can be indicated, instead of the whole apparatus being booked for examination. It is with the object of making this information more readily accessible to enginemen that the new instruction van has been fitted up, and is now on a tour of the locomotive districts.

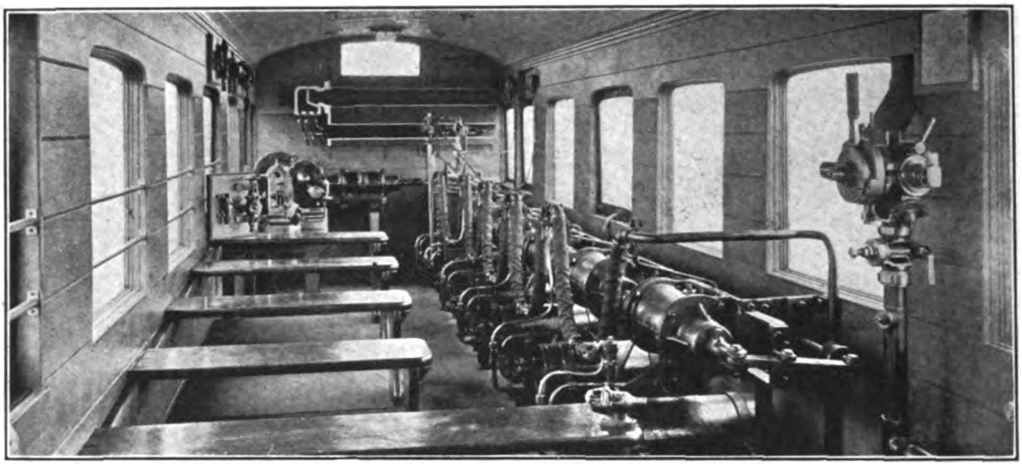
The vehicle which has been utilized for the purpose is a six-wheeled bogie saloon. The partitions and interior fittings have been removed, and their place taken by benches carrying the various apparatus, while the center portion of the saloon constitutes a small lecture theater, with seats for the men, and a blackboard hinged to the roof. Working drawings of all important parts of a locomotive are contained in a cupboard near the entrance to the van, and instruction books on different subjects are also provided.

The Westinghouse brake is represented by a complete set of fittings, corresponding to an engine and train of six coaches. The main reservoir is connected to the external train pipe, so that the action of the brake can be studied under working conditions, while connected to the driver's valve on the "engine" and to the triple valve on the first "coach" are corresponding valves, sectioned so that their positions can be seen when the brake is "on" or "off." A Westinghouse pump in addition to engine and carriage brake cylinders is also shown in section.

One of the most interesting experiments to be made here is to test the vexed question whether the brake is applied on the front or the rear



View Showing Lecture Theatre in Instruction Van.



WESTINGHOUSE BRAKE APPARATUS AND VACUUM BRAKE EJECTOR IN INSTRUCTION VAN.

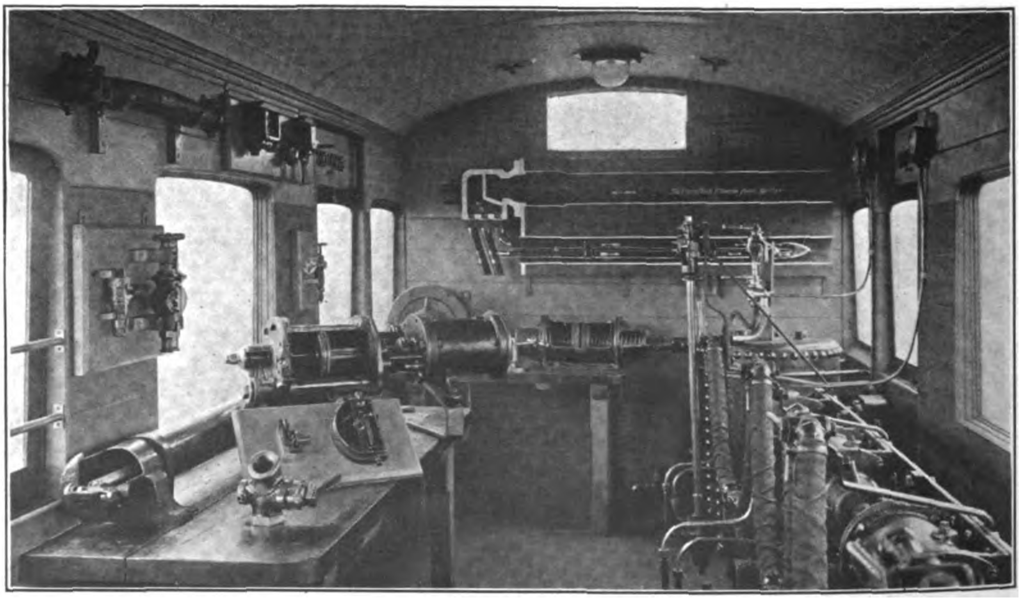
of the train first. Disregarding the first "coach," where the triple valve has to actuate the sectioned duplicate to which it is attached, one cannot detect any appreciable interval between the times of application on the different coaches, except the small irregular differences which may be accounted for by the slightly varying conditions of the triple valves.

The vacuum brake is also shewn in full, by sectional ejectors of the ordinary and "dreadnought" types, with a length of train pipe connected up to a brake cylinder complete with its release valve and to the guard's emergency valve, which can be seen to lift when a sudden application of the brake is made from the engine.

Other air power apparatus includes the water pick-up with its actuating valve, the air standing apparatus, and the air-reversing gear complete, with one side of the casing cut away to expose the locking gear and the lifting nut.

Now that practically every main line train of importance is warmed in cold weather, all express engines and many others are fitted with the steam heating apparatus . It will be remembered that live steam from the engine is passed through a reducing valve, and is then led through a pipe along the train, with flexible couplings between the coaches, and a branch pipe leading to the heater in each compartment, the steam in the heaters being at atmospheric pressure only. A complete set of fittings is shown including the reducing valve, relief valve, drip valves, heater, etc. The reducing valve in particular is a complicated piece of apparatus, but its action can be clearly grasped by a study of the section.

One of the most interesting exhibits for enginemen will be the sectional model of a superheater. A complete superheater smoke tube



WESTINGHOUSE PUMP AND SUPERHEATER MODEL IN G. E. R. INSTRUCTION VAN.

and element would be of too great length for convenient exhibition in the van, and so this model has been prepared, an actual element being shortened so as to occupy a smaller amount of space while still shewing clearly the principle.

With superheated steam a mechanical lubricator is generally provided. The standard lubricator has eight feeds, but in that in the van two feeds only are fitted, the pump for one being complete and for the other sectioned so that the working can be seen. A small amount of oil is kept in the reservoir, and by regulating the feed plugs of the two pumps in unison, the increased or diminished discharge of oil obtained from the complete pump can be seen at the same time as the action of the plunger is visible in the sectional pump.

Almost the simplest fitting in the whole of the instruction van is yet perhaps the one from whose presence most immediate and direct benefit will be derived by the enginemen. A variable blast pipe has been in use on this railway for many years, but the present pattern has been standardized quite recently and is not used to the fullest advantage by many drivers who do not realize its possibilities. In the example shown the casing of the butterfly valve which governs the blast pipe orifice has been cut away, and it can be seen how by setting the lever in the cab in different positions the blast can be regulated to suit any condition of the fire and the steam pressure. With this blast pipe the damper should be kept fairly wide open, and the draught regulated by means of the blast pipe lever in the cab.

Space is wanting to describe the many other pieces of apparatus displayed on the benches and the walls of the van, but all are so arranged that their working parts are exposed. The action of the first part of the regulator, the reason for injectors choking up and the methods by which this can be prevented and remedied, the construction of the sand trap and its arrangement for cleaning out, are a few of the examples which can be seen by little more than a casual inspection, and, if a thorough examination of everything is made, considerable benefit is certain to be derived.

Much interest has been displayed among the enginemen during the time that the instruction van has been open to inspection, particularly by those expecting shortly to be called up for examination. For some time the van has been located in the Ipswich District, whence it proceeded to March on April 6th. After leaving March it will cover by degrees the whole of the system and if the interest shown so far is maintained, it should do much to increase the efficiency of the running staff, and thereby improve still further the regularity of train service for which British railways are noted.

Railway Mileage of the World

THE *Archiv fur Eisenbahnwesen*, official publication of the Prussia Ministry of Public Works, has issued its compilation of the railway mileage of the world for the year 1912. It also has made a compilation of the mileage of railways owned by Governments and all private companies for the years 1910 and 1912. Following are the statistical results in miles:

EUROPE.

Country.	Private railways.	State railways.	Total.
Germany	2,750	36,200	38,950
Austria-Hungary	5,400	23,000	28,400
Great Britain	23,400	.....	23,400
France	25,660	5,540	31,200
Russia (in Europe)	14.200	24,400	38,600
Italy	1,870	8,930	10,800
Belgium	2,680	2,690	5,370
Luxemburg	204	122	326
Netherlands	880	1,100	1,980
Switzerland	1,290	1,700	2,990
Spain	9,540	.....	9,540
Portugal	1,155	695	1,850
Denmark	1,124	1,216	2,340
Norway	290	1,630	1,920
Sweden	6,090	2,760	8,850
Servia	226	356	582
Roumania	80	2,160	2,240
Greece	1,000	.....	1,000
Bulgaria	.....	1,200	1,200
Turkey (in Europe)	1,045	.....	1,045
Malta, Jersey, Isle of Man	68	.....	68
Total miles	98,952	113,699	212,651

AMERICA.

Country.	Private railways.	State railways.	Total.
Canada	24,930	1,770	26,700
United States	249,789	.....	249,789
Newfoundland	770	.....	770
Mexico	7.990	7,860	15,850
Central America	1,621	359	1,980
Greater Antilles	3,240	150	3,390
Lesser Antilles	336	.....	336
Colombia	511	110	621
Venezuela	564	68	632
British Guiana	103	.....	103
Dutch Guiana	37	.....	37
Ecuador	650	.....	650
Peru	610	1,050	1,660
Bolivia	895	.....	895
Brazil	7,400	6,400	13,800
Paraguay	230	.....	230
Uruguay	1,640	.....	1,640
Chile	1,980	1,980	3,960
Argentina	18,110	2,490	20,600
Total miles	321,406	22,237	343,643

ASIA.

Country.	Private railways.	State railways.	Total.
Russian Central Asian Territory	1,090	2,970	4,060
Siberia, Manchuria	2,920	3,830	6,750
China	6,100	.....	6,100
Japan, including Korea	1,980	4,860	6,840
British India	4,100	29,300	33,400
Ceylon	580	.....	580
Persia	33	.....	33
Asia Minor, etc.	2,370	910	3,280
Portuguese Indies	51	.....	51
Malay States	860	.....	860
Dutch Indies	210	1.380	1,590
Siam	110	590	700
Cochin China, etc.	2,290	.....	2.290
Total miles	22,694	43,840	66,534

AFRICA.

Country.	Private railways.	State railways.	Total.
Egypt	880	2,790	3,670
Algeria and Tunis	2,160	1,800	3,960
Belgian Kongo	860	.....	860
Union of South Africa:			
Cape Colony	410	3.400	3,810
Natal	40	1,050	1,090
Central South Africa	280	3,090	3,370
Rhodesia	2.350	.....	2,350
Colonies:—			
Germany:			
German East Africa	.....	745	745
German S. W. Africa	.....	1,300	1,300
Togo	.....	200	200

Kamerun	.....	150	150
English	640	1,310	1,950
French	1,940	.....	1,940
Italian	96	.....	96
Portuguese	1,000	.....	1,000
Total miles	10,656	15,835	26,491

AUSTRALASIA.

Country.	Private railways.	State railways.	Total.
New Zealand	120	2,760	2,880
Victoria	160	3,520	3,680
New South Wales	340	3,760	4,100
South Australia	100	2,080	2,180
Queensland	630	4,000	4,630
Tasmania	230	470	700
West Australia	1,040	2,380	3,420
Hawaii, etc.	88	.....	88
Total miles	2,708	18,970	21,678

SUMMARY.

	Private railways.		State railways.	
	1910.	1912.	1910.	1912.
Europe	99,497	98,952	107,490	113,699
America	314,187	321,406	12,170	22,237
Asia	26,537	22,694	36,651	43,840
Africa	9,204	10,656	13,646	15,835
Australasia	1,234	2,708	17,995	18,970
Total miles	450,659	456,416	187,952	214,581

	Total.	
	1910.	1912.
Europe	206,987	212,651
America	326,357	343,643
Asia	63,188	66,534
Africa	22,850	26,491
Australasia	19,229	21,678
Total miles	638,611	670,997

Financial

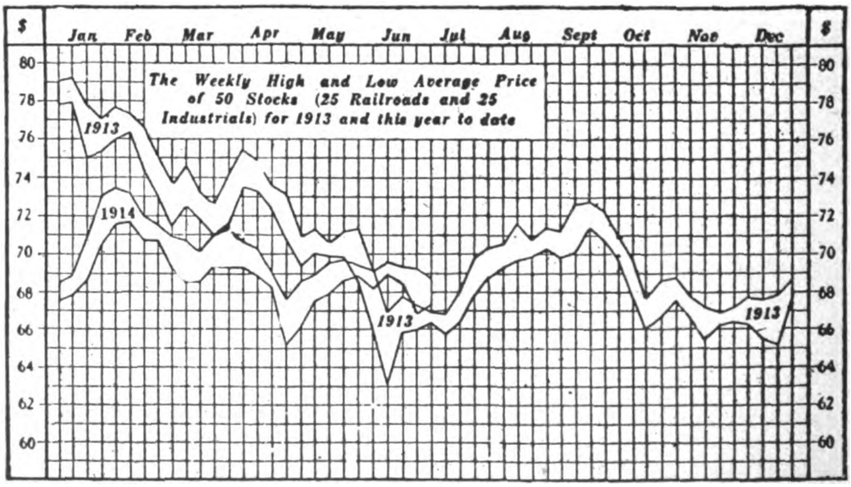
The Developments During June.

JUNE was a quiet month, both in the bond and stock market. So far as statistics show, the variations in the prices of leading securities were so small as to pass unnoticed. For example, the average of ten representative railroads and ten industrial stocks, show a loss of barely a point for the whole month, while bonds, except in a few instances, where specially influenced, barely moved, although such movement as took place registered a slight advance.

The stability of the market during June must be interpreted in the main as favorable, and indicates that it has reached the point of resistance where only conditions of a most unusual character can drive it much lower. Should the Interstate Commerce Commission render a decision favorable to the carriers in the advance rate case and should the grain crop measure fully up to expectations, such developments would be almost certain to produce a stimulating effect upon the general market in spite of the Mexican situation and the President's evident determination to carry his legislative trust program to a definite conclusion. From the present outlook, it may be confidently predicted that the energy of the American people will not remain pent up much longer. It may require a political upheaval to bring about the desired results, but there are many indications that a remedy is going to be applied soon, and with beneficial results.

June was a notable month in many respects. To begin with, the outflow of gold was of unusual proportions but apparently had no effect upon the market in spite of the fact that it occurred at a time when preparations were being made for one of the two heaviest interest and dividend periods of the year. The Supreme Court rendered two decisions, both of which were in the main, favorable to the railroads. The first established the title of certain Western railroads to land grants of inestimable value and extent and the second, in what was known as the Shreveport case, asserted in definite terms the supremacy of federal over state control of railroad rates. The Intermountain decision also rendered by the Supreme Court during June was not so favorable to the railroads, confirming as it did the zone system of applying rates and, in effect, considerably en-

The Course of the Market



The chart indicates that during June the stock market for the first time during the year, reached a higher average level as compared with the average movement for the corresponding period in 1913.

STANDARD BONDS

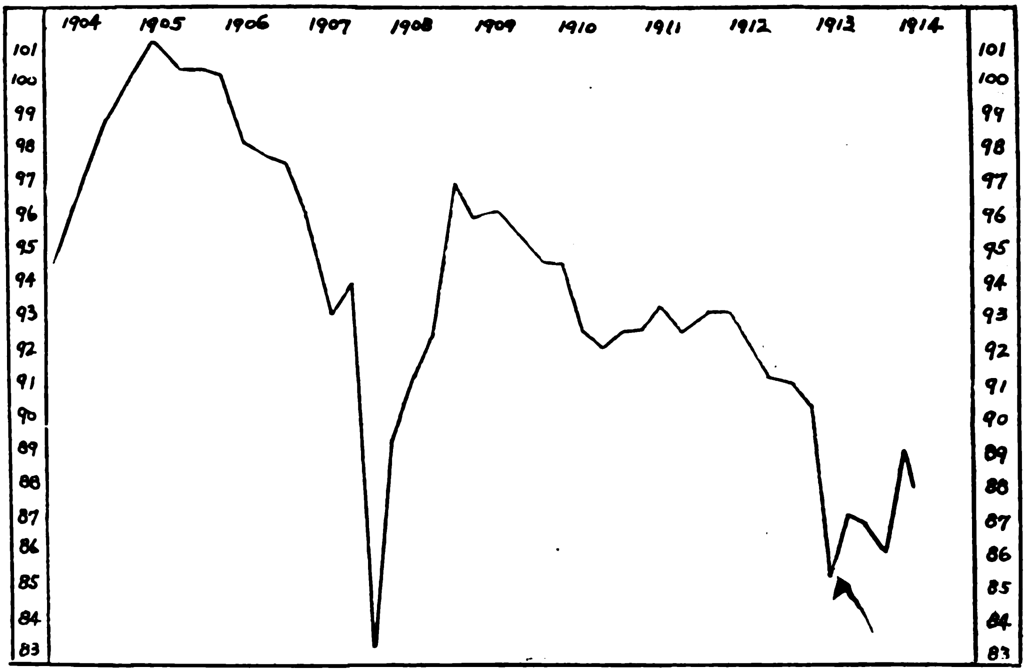
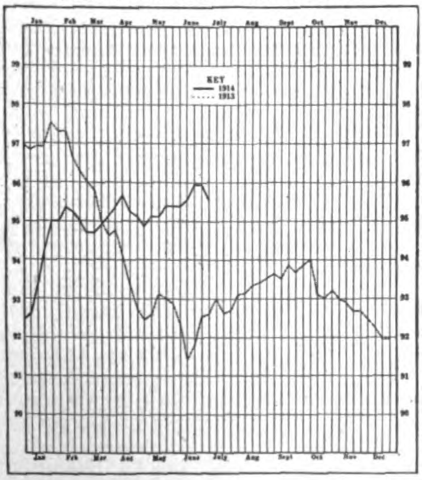


Chart of Prices of Twenty-five Railroad Bonds, 1904-1914

larging the powers of the Interstate Commerce Commission . The decision will have no inconsiderable effect upon the freight revenues of Western roads.

The following chart, published in the New York Analist, and which is constructed by employing the average yield of ten select savings bank bonds capitalized on a four per cent basis and so converted into a market price, shows that the weekly fluctuations during 1914 have had, in the main, a distinct upward tendency, while the present market price is considerably in advance of what it was a year ago.

Curve of the Basic Price of Bonds



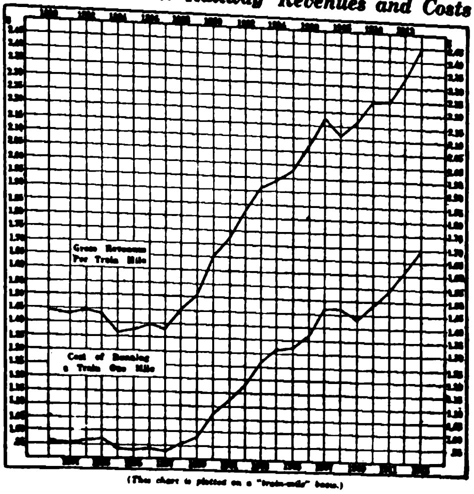
The diagram on page 550 shows that the movement in stock prices has recently been of a more encouraging character and during June, for the first time in 1914, the average was above that for the corresponding period of the preceding year. Whether prices will continue to advance depends largely upon legislative activities at Washington, upon developments in the Mexican situation and upon the freight rate decision soon, we hope, to be issued by the Interstate Commerce Commission. Should developments in this particular prove of a favorable character the tariff could hardly prove a factor in delaying a return to more general prosperous conditions.

The above diagram has recently been prepared by Redman and Company, of New York, and shows the fluctuation in the price of twenty-five representative railroad bonds from the beginning of 1904 to May, 1914, inclusive.

The Growth of Railway Revenues and Operating Expenses.

THE New York *Annalist* has recently published the following chart showing the remarkable growth of railway revenues and operating expenses in the United States since 1890. The chart has been plotted on a train mile basis. The period from 1890 to 1897, was one of receiverships and reconstruction and during these years the lines show only minor fluctuations going downward as often as upward. That period of inactivity was followed by one of great expansion and since then the lines have moved steadily upward, the only reaction being in 1900, which was the result of the panic of 1907. Figures employed in plotting the chart are taken from the reports of the

The Expansion of Railway Revenues and Costs



(This chart is plotted on a "train-mile" basis.)

Interstate Commerce Commission to 1911, and from the reports of the Bureau of Railway News and Statistics for 1912 and 1913. They include all revenue trains, both freight and passenger.

The increase in revenue per train mile in 1913 over 1890 was $1.005, or 69.6 per cent, and the increase in operating expenses per train mile, $0.738, or 76.8 per cent. Net operating revenue, which is shown by the difference between the two lines, has grown from 48.2 cents in 1890 to 74.9 cents in 1913, a gain of 26.7 cents, or 55.4 per cent.

That, however, by no means implies that net profits have increased proportionately—in fact, they have not—because the factor of capitalization must be considered. In order to produce greater revenue per train mile it was necessary to spend enormous sums upon equipment, improvement of roadbed, terminals, and so forth, and in that way fixed charges have been greatly increased. The amount of new capital put into the railroads, year by year, is shown in the following table, which gives the net outstanding capitalization of all the railroads in the United States:

NET CAPITALIZATION OF RAILWAYS IN THE UNITED STATES.

(Railway securities owned by the railroads excluded.)

1913....	*$15,508,849,822	1901....	$9,482,649,182
1912....	*14,657,545,069	1900....	9,547,984,611
1911....	**15,008,707,570	1899....	9,432,041,731
1910....	14,338,575,940	1898....	9,297,167,776
1909....	13,711,867,733	1897....	9,168,071,898
1908....	12,833,591,510	1896....	9,065,518,857
1907....	12,920,352,548	1895....	8,899,572,695
1906....	11,671,940,649	1894....	8,646,600,008
1905....	11,167,105,992	1893....	8,331,603,006
1904....	10,711,794,078	1892....	8,294,689,760
1903....	10,281,598,305	1891....	8,007,989,723
1902....	9,925,664,171	1890....	7,577,327,615

***Does not include returns for switching and terminal companies, included prior to 1911. *As computed by the Bureau of Railway News and Statistics. The decrease in 1912 was due to a large increase in the railway securities owned by railroads.*

The average yearly increase in capitalization during the twenty-four-year period was about $330,000,000.

Cash Investments of the Railways During Six Years.

DURING the six fiscal years 1908 to 1913, inclusive, the steam railways of the United States of Class I invested in their road and equipment cash to the amount of $4,010,385,303. Railways of Class I, so designated by the Interstate Commerce Commission, are those with annual operating revenues of over $1,000,000. They include about 90 per cent of the mileage, receive more than 96 per cent of the revenues, and handle more than 98 per cent of the traffic.

This cash investment of the operating railways of Class I of the Eastern District during the six years was greater than the amount of capital securities issued by them during this period, and was 19.9 per cent of the aggregate of their capital securities outstanding June 30, 1913; of the railways of the same class of the Southern District it was 21.1 per cent, and of the railways of the same class of the Western District it was 23.2 per cent of the aggregate of their capital securities outstanding June 30, 1913. That is, the cash actually expended by these railways during the last six years upon their properties used in transportation amounts to more than one fifth of their total capitalization at the close of the last fiscal year. This is at the rate of $668,397,551 per year.

These figures are obtained through a compilation made by the Bureau of Railway Economics from the reports of the railways to the Interstate Commerce Commission, and have not heretofore been collated.

Summary of Financial Results for April.

THE Bureau of Railway Economics at Washington has issued a bulletin showing the revenues and expenses of steam roads in the United States for the month of April. Returns for that month reduced to a per mile of line basis and compared with the returned for April, 1913, show a decrease in total operating revenues per mile of 4.1 per cent and a decease in operating expenses per mile of five per cent. Net operating revenue per mile was less by $4.00, or 1.5 per cent than for April, 1913, while that for April, 1913, was 2.4 per cent greater than for April, 1912.

Railways operating 225,821 miles of line are covered by this summary, or about ninety per cent of all steam railway mileage in the United States. Their operating revenues for the month of April, 1914, amounted to $230,534,172. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with April, 1913, total operating revenues show a decrease of $7,970,644. Total operating revenues per mile averaged $1,021 in April, 1914, and $1,065 in April, 1913, a decrease of $44, or 4.1 per cent. There was a decrease of 5.2 per cent in freight revenue per mile, and a decrease in passenger revenue per mile of 0.2 per cent.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $172,231,630. This was $7,556,970 less than for April 1913. These operating expenses per mile of line averaged $763 in April 1914 and $803 in April 1913 a decrease of $40 per mile or 5.0 per cent.

Net operating revenue that is total operating

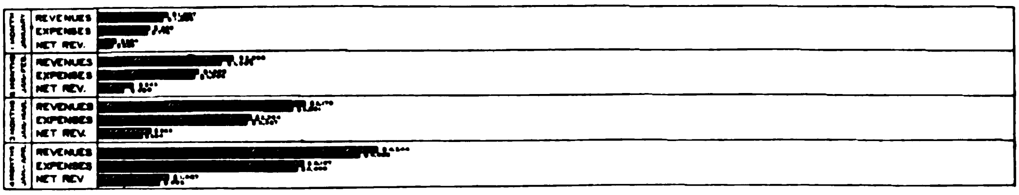


DIAGRAM COMPARING FOR THE INDICATED PERIODS OF THE CALENDAR YEARS 1913 AND 1914
CUMULATIVE REVENUES, EXPENSES AND NET REVENUE PER MILE OF LINE
ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1,000,000
1913 ▬ 1914 ▬

revenues less operating expenses amounted to $58,302,542, which was $413,674 less than for April, 1913. Net operating revenue per mile of line averaged $258 in April, 1914 and $262 in April, 1913, a decrease of $4 per mile, or 1.5 per cent.

Taxes for the month of April amounted to $11,465,060, or $51 per mile, an increase of 9.3 per cent over April, 1913.

Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $206 per mile of line, and in April, 1913, $214, thus decreasing $8, or 3.5 per cent. Operating income for each mile of line for each day in April averaged $6.88 and for April, 1913, $7.14. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

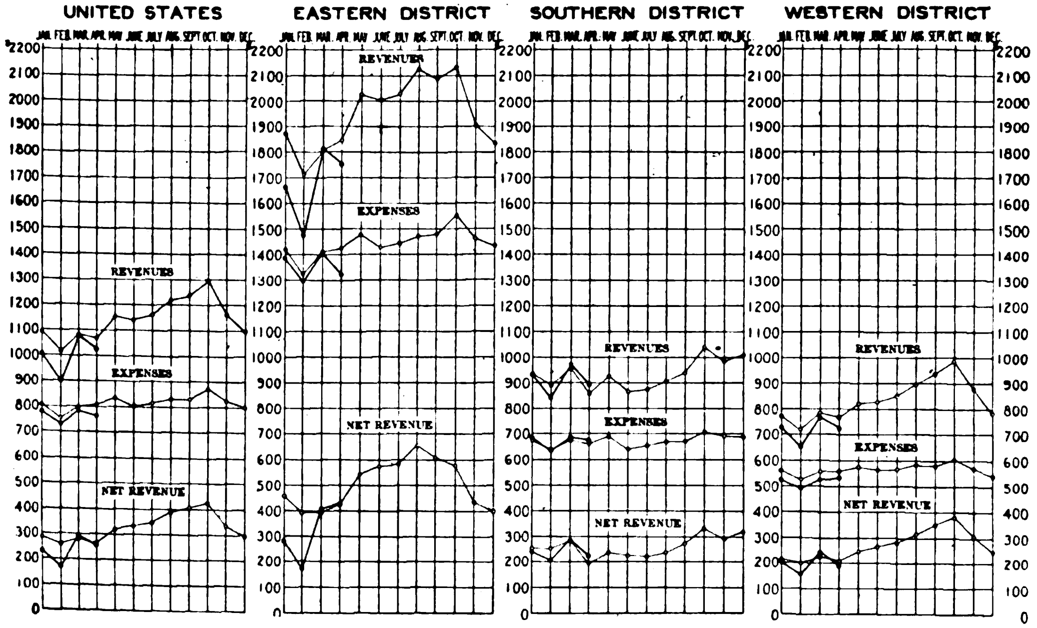
The operating ratio for April, that is, the per cent of total operating revenues absorbed in operating expenses, was 74.7 per cent, which is comparable with 75.4 per cent in April, 1913, and 73.6 per cent in April, 1912.

Southern Railway Voting Trust Dissolved.

THE voting trust with respect to the stock of the Southern Railway Company, which has been in existence since the organization of the company in June, 1894, has been dissolved. In giving notice of such dissolution the voting trustees have issued to the stockholders a circular in which they say:

"Since October 15, 1894, the voting trustees under the voting trust agreement have represented certificate holders primarily in the nomination of the board of directors and in voting on propositions recommended by the board of directors for the provision of new capital for the company. In view of the company's present financial strength, conservative management and excellent physical condition, the voting trustees believe that the time has now come when they may properly and safely terminate the voting trust. In surrendering their

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE
ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1 000 000
CALENDAR YEAR:
1913 •
1914 •



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

trust to the stockholders the voting trustees have the satisfaction of reporing a gratifying development of the system of railroads coincident with the extraordinary and steadily increasing growth in population, industrial development and wealth of the territory served, a development largely due to the activities of Southern Railway Company in promoting the commerce and industry along its lines.

"In surrendering our trust, we do so with confidence that the territory served by the Southern Railway Company will continue to increase in population, industry and wealth, and that the company will share in such prosperity. From a disjointed collection of incomplete single track lines the system will have been developed into an efficient double tracked trunk line for the entire main line from Washington to Atlanta, with adequate shops and terminals at the principal cities of the entire territory served by the company, all well adapted to meet the requirements of the prosperous and growing communities which the Southern Railway Company serves. We commend, therefore, to the stockholders the continuance of the policy of progressive betterment which has been constantly urged by the management since the organization of the company, and to that end that there shall be liberal provision of new capital. It is the true policy of the company to lead, rather than to follow, in the future development of the South, and to maintain its reputation and its past achievements in such leadership."

The St. Paul New Four and One-Half Per Cent Bonds.

RAILROAD officials will watch with interest the manner in which investors will receive the recent offering of the Chicago, Milwaukee and St. Paul 4½ per cent bonds. These bonds are not underwritten, but are being offered by Kuhn, Loeb and Company and the National City Bank, both of New York, and can, of course, be bought through any banking or bond house, but the two strong banking houses, which are making the offer are acting simply as agents for the railroad company. It is understood that they are taking one-half of 1 per cent as compensation for their services in calling the attention of their clients to the issue and are not obligating themselves in any way to take bonds that are not subscribed for by the general public. This saves the railroad company about 1 per cent net—the usual banker's commission being 1½ per cent—and gives it the benefit of the full price at which the bonds are offered to the public, the bonds usually being sold to an underwriting syndicate at in the neighborhood of 2 per cent less than the offering price to the public. This is a total saving of about 3 per cent; but on the other hand the railroad company has no assurance that it can sell all of the $30,000,000 bonds at this price, nor can buyers of these bonds have any assurance that all of the needs of the railroad company for which it is selling the bonds will be met through their sale.

The Lease of the Northern Central Railway.

THE lease of the Northern Central Railway Company by the Pennsylvania Railroad is at last about to be put into effect. Under this agreement the Northern Central Railway Company is to pay the stockholders an extra cash dividend of five per cent or $5.00 per share amounting to $1,934,320, and is to pay a stock dividend of forty per cent amounting to $7,737,000 with interest at the rate of eight per cent per annum from the first of January, 1911, to the 30th of June, 1914, amounting in cash to $1,773,916. If Northern Central stock ex the stock in cash dividends and the interest on the stock dividend should sell at $90,00 per share, the 154,740 shares of Northern Central stock to be received by the present stockholders will be worth $13,926,600. This together with the $5 per share cash dividend $1,934,320, and the dividends on the 154,740 shares of new stock from January 1, 1911, amounting to $1,773,916, will in the aggregate amount to $17,634,836. This is the amount of values in money which was secured for the Northern Central stockholders by the Moore Committee.

Baltimore and Ohio Declares its Regular Semi-Annual Dividends.

ON July 9th, the Board of Directors of the Baltimore and Ohio Railroad, declared the regular semi-annual dividends of two per cent on the preferred stock and three per cent on the common stock. With this declaration, the customary dividends of four per cent on the preferred and six per cent on the common are maintained, accumulated surplus contributing $2,469,095 of the $11,538,888 required for this purpose.

There was also charged against surplus the sum of $909,272, representing interest accrued but not collected during the year on advances made to and on account of the Cincinnati, Hamilton and Dayton Railway Company.

The statement of the year's operations, considered at this meeting, were based on actual figures for eleven months, and estimated figures for the month of June. The comparative figures for 1914, and 1913, are as follows:

	1914. June estimated)	1913. (Actual)	Increase or Decrease.
Total oper. rev. .	$97,410,138	$101,556,132	*$4,145,994
Total oper. exp. .	72,053,286	73,779,638	*1,726,352
Net oper. rev. ..	25,356,852	27,776,494	*2,419,642
Outside oper.—Net rev. (deficit)	909,088	874,311	*34,777
Total net rev. ..	24,447,764	26,902,183	*2,454,419
Taxes accrued ..	3,225,823	2,960,905	†264,918
Oper. income ..	21,221,941	23,941,278	*2,719,337
Other income ..	5,923,135	5,212,206	†710,929
Gross corp. inc..	27,145,076	29,153,484	*2,008,408
Deduc., int., etc..	18,075,076	15,819,233	†2,256,048
Net income	9,069,795	13,334,251	*4,264,456

†Increase. *Decrease.

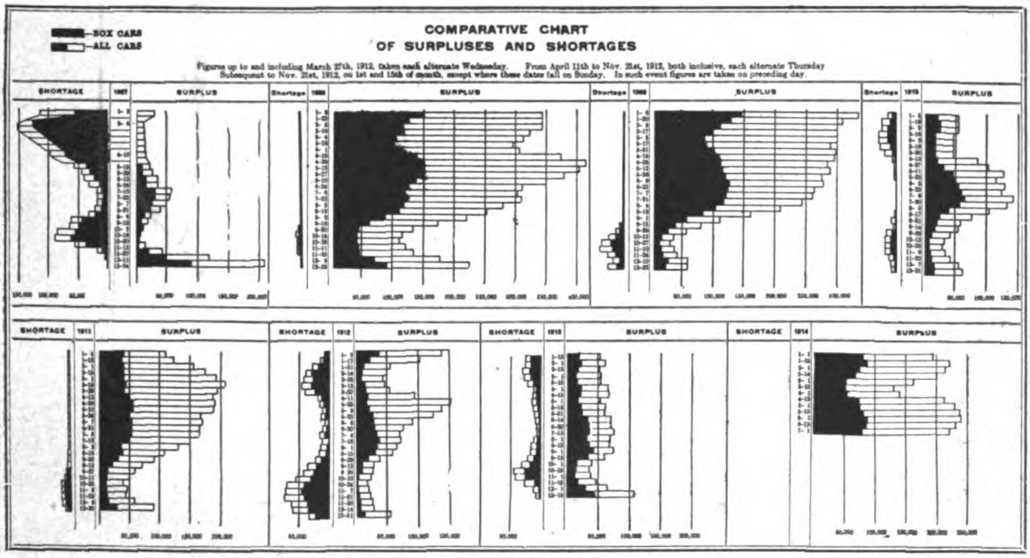
The expenses for the year have been augmented by extraordinary charges, amounting to $2,112,085 for permanent reconstruction of property damaged or destroyed by the flood of March, 1913. The restoration of the property so damaged has been completed and practically all charges on this account have been disposed of in the year just closed, it being thought preferable to charge these expenses out at present rather than to extend them over a series of years.

Operation

The Car Situation.

According to the latest report of the American Railway Association there has been a reduction of approximately 22,000 in the idle cars between June 15th and July 1st. The figures on the latter date being 220,875 and on the former date 232,994. While this is an encouraging reduction, it is far from the more favorable conditions of a year ago which show on a corresponding date a total surplus of only 70,740 cars. As to location, the report shows that there has been a reduction in box car surplus in New England, official classification territory and in the western half of the southeast. In the winter wheat section, there is a small increase of surplus box cars while in the spring wheat section, there was practically no change from the figures of the preceding statement. There has also been a reduction in surplus box cars on the Pacific Coast and in Canada. The following table shows the surpluses and shortages on the last two reported dates, together with a comparison of the previous year's figures:

	Total Surplus	Total Shortage
July 1, 1914	220,875 cars	1,333 cars
June 15, 1914	232,994 cars	660 cars
June 30, 1913	70,740 cars	7,036 cars

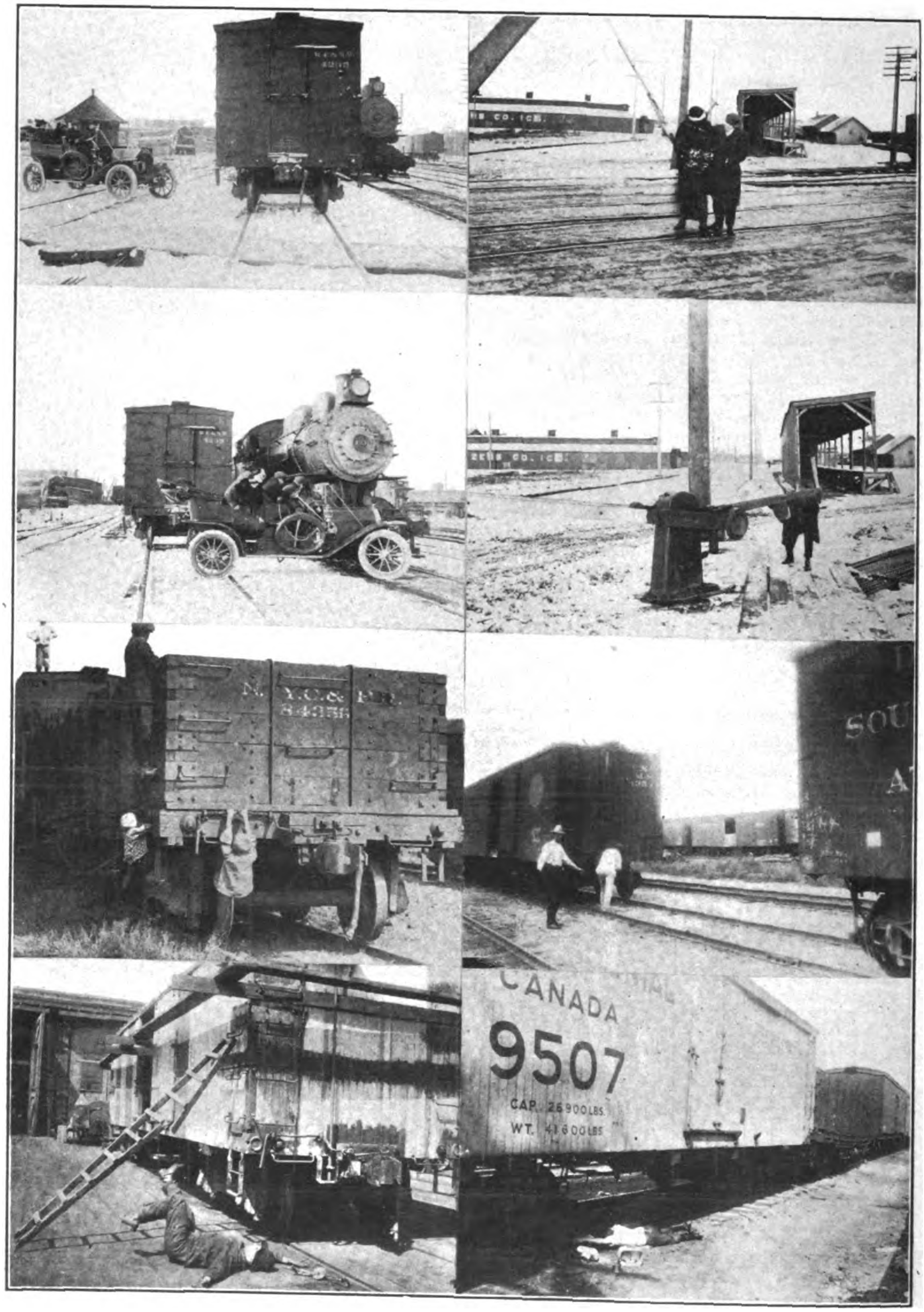


Safety Developments on the New York Central Lines.

The safety work in the roads comprising the New York Central Lines has been carried on during the past few years in a most thorough and systematic manner. The work is conducted through a special bureau, in charge of a general safety agent, who has under him a staff of assistants who devote their entire time to safety work. The roads included under this organization are the New York Central & Hudson River R. R., Lake Shore & Michigan Southern Ry., C. C. C. & St. L. Ry., Michigan Central R. R., T. & O. C. Ry., L. E. & W. Ry., C. I. & S. R. R. and Indiana Harbor Belt Ry. The work of the men employed in the Safety Bureau includes inspecting yards, shops, etc., and educational work among the employes. Standard Specifications covering the application of safeguards about machinery in shops, roundhouses, etc., and special rules governing the practices of employes that effect the personal safety of themselves and others have been adopted.

Safety Committees, composed of both officers and employes, were organized on each operating division two years ago. Through these committees recommendations were received as to the installation of mechanical safeguards and the improvement of conditions which would help to increase the safety of employes, passengers and others. During the two years these committees have been in existence approximately 10,000 recommendations made by the committees have been accepted and improvements made as recommended.

It has been the experience of officials on the New York Central Lines that one of the most important parts of the safety work has been the education of employes looking toward the elimination of unsafe practices. With this end in view schools or classes have been held in lecture cars at all terminals, where employes have received instruction as to the safe way of doing their work. Stereopticon views, illustrating the unsafe and safer way of doing work, have been used, and where they could not be reached otherwise, such as in shops, they have been required to attend the classes on the Company's time. An average of 500 employes every day receive safety instruction in these lecture cars. In ad-



EXAMPLES OF ILLUSTRATIONS USED IN SAFETY WORK.

The first two pictures show the necessity for automobile drivers to exercise care in crossing railway tracks. Children trespassing are shown in the next illustration. Many lose their lives in this manner annually. The fourth picture shows the results of failure to inspect defective ladder. One of the most fruitful sources of accidents is illustrated in the fifth picture and is caused by persons crossing track without looking both ways. Illustration six shows child disregarding lowered gates. Illustration seven shows the proper protection for employe when making necessary examination of car. The eighth illustration is an example of an attempt to hop on cars while in motion.

dition, many large safety rallies have been held in the more important terminals where illustrated lectures on safety have been given for the employes and their families. An interesting and instructive exhibit car, containing an exhibition of photographs and models of safety appliances and practices, has been equipped and sent over the entire system in charge of a competent instructor as a means of further education to employes.

The New York Central Lines' quarterly magazine "Safety" sent to all English-speaking employes, and numerous bulletins, circulars, etc., some of them printed in several languages, and distributed to the men, have further aided in this educational work.

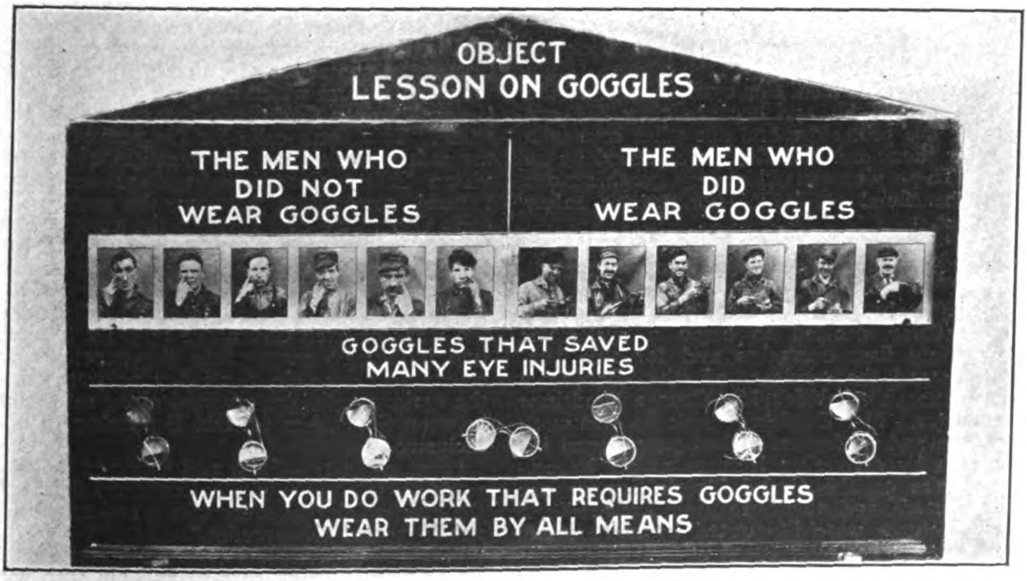
The results as indicated in reductions in serious injury and death cases has been most gratifying. For instance, it was found that during the year ending June 30th, 1913, after the safety movement had been fully organized for one year, there were 72 fewer employes killed on duty on all the New York Central Lines, than during the year ending June 30th, 1911, before the special safety organization on these lines was completed. As for the results during the first four months of 1914, as compared with similar months in 1913 and 1912, the following figures show what a remarkable improvement has occurred in the safer operation of the various lines which comprise this system:

117 fewer persons killed in 1914 than 1912, a decrease of 37 per cent.
104 fewer persons killed in 1914 than 1913, a decrease of 34 per cent.
657 fewer persons injured in 1914 than 1912, a decrease of 15 per cent.
1409 fewer persons injured in 1914 than 1913, a decrease of 27 per cent.

The New York Central policy has been to conduct this safety work along the broadest lines, in order to prevent accidents where the least degree of responsibility rests upon the road as well as those where the highest responsibility rests upon it. With this end in view a vigorous campaign has been carried on against trespassing on the Company's tracks. This campaign has been carried on principally in New York State, where there is a law making trespassing on railroads a misdemeanor. Beginning in August, 1913, under the direction of Marcus A. Dow, the general safety agent, a campaign of publicity was started. Notices were posted conspicuously along the entire right-of-way, warning persons against walking the tracks. The newspapers were interviewed and it was advertised broadcast that the road would begin prosecuting offenders. A representative of the Safety Department spent weeks calling upon the police court magistrates and justices in all towns along the line, enlightening them as to the great number of citizens killed and injured annually from needless track walking and soliciting their co-operation in stamping out the evil. Then the road's special officers began making arrests and hundreds of convictions followed. The result has been that during the seven months ending April 30th, 1914, there were 38 fewer trespassers killed and 42 fewer injured than during the same period the year previous.

It has developed that a large percentage of grade crossing accidents of more recent years have been occasioned by the reckless or careless driving of automobiles, many of whom seem to find it unnecessary to pay any attention to the Stop, Look and Listen signs, prominently displayed at all railway crossings. In order to induce greater care in this particular, the New York Central has recently issued the following notice which has been sent out to automobile clubs for publication in automobile journals and also for distribution in other ways to owners of automobiles.

"Railroad officials throughout the country note that accidents to automobiles on grade crossings appear to be increasing at an alarming rate. An official of one of the principal roads in the


OBJECT
LESSON ON GOGGLES
THE MEN WHO DID NOT WEAR GOGGLES
THE MEN WHO DID WEAR GOGGLES
GOGGLES THAT SAVED MANY EYE INJURIES
WHEN YOU DO WORK THAT REQUIRES GOGGLES WEAR THEM BY ALL MEANS

The Constant Employment of Goggles is the Only Manner to Protect Eyes in Certain Classes of Shop Work.

country is authority for the statement that fifteen out of every hundred persons killed or injured in grade crossing accidents are occupants of automobiles. On this basis there are approximately 300 persons killed and 750 injured driving automobiles over grade crossings in the two years ending June 30, 1912, and, while complete figures for the succeeding year are not available, the frequency with which such accidents occur would indicate there has been no diminution but rather an increase in this class of accidents.

"On three important crossings on a large eastern railway system a test was recently made to determine with what degree of care the average person approached and crossed the tracks. During a period of eight hours, 923 automobiles crossed the tracks. Of that number the drivers of 801 cars or 87 per cent did not look in either direction along the tracks before crossing. There were 83 of them or nine per cent who looked in only one direction, while only 39 or four per cent took the precaution to look both ways. The automobile accidents that occur on crossings are most lamentable, the victims usually being men or women of intelligence and high social standing. What makes it all the more distressing that these accidents should occur, is the fact that a little ordinary care and caution on the part of the drivers of cars would prevent them. The rule of stop, look and listen should always be faithfully observed at railroad crossings. But few persons properly observe these three words of caution. Oftentimes an accident is the result of attempting to cross the tracks at high gear, when the machine has momentum, but no power, with the result that the machine gets stalled on the track and before the gear can be changed and another start made, the accident has happened. Drivers should always approach and cross a railroad crossing at low gear, and never fail to "Stop, Look and Listen" before crossing."

The New York Central Lines are making a particularly strong effort to lessen the chance of eye injury by the employment of goggles, and the photograph on page 557 shows an exhibit which has been placed in all of the principal shops on the various lines of the system. This exhibit shows six men employed in one of the shops who lost an eye because they did not wear the eye protectors and six other men who did wear them and had their eyes saved by so doing. These pictures tell a very graphic story of the beneficial results of the greater safety movement.

Safety Developments on the Grand Trunk.

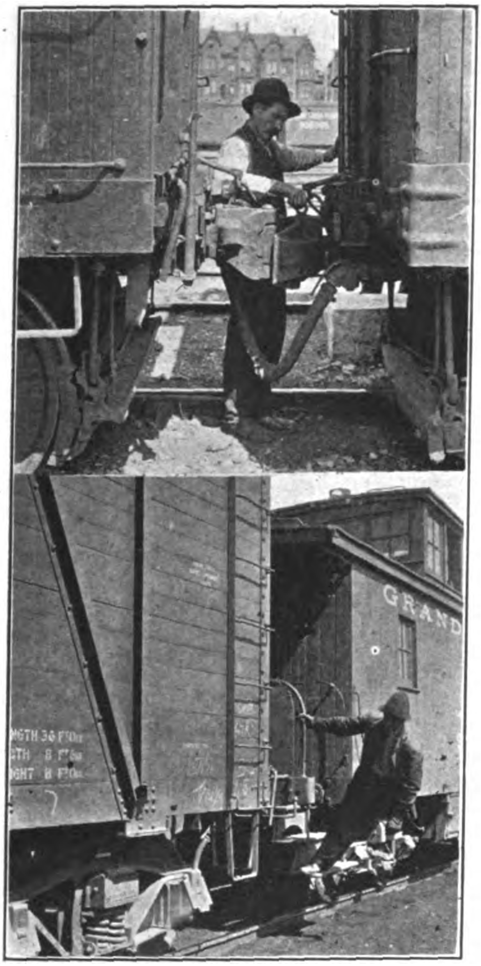
In the early part of 1913, the Grand Trunk Railway decided to begin a systematic safety first campaign and for this purpose engaged the services of the Bradshaw Safety Bureau, of which Mr. George Bradshaw is manager. Mr. Bradshaw took up the work in person and in August of last year, began his campaign by delivering lectures at all important centers on the Grand Trunk System on: "The Unsafe and the Safe in Railroading." These lectures were illustrated by stereopticon views and created an unusual interest among the employes, the attendance running as high as 1500 at a single meeting and the Company being frequently compelled to run special trains at the request of employes in order to permit their attendance.

After a series of lectures in which the employes procured a good general idea as to what the safety involved, a safety organization was perfected by appointing the usual safety committees. These consisted of a general safety committee, whose membership included two vice-presidents, the chief engineer, the engineer, maintenance of way, the superintendent of motive power, the superintendent of the car department, the general superintendents and the chief claim agent in addition to Mr. Bradshaw as safety engineer and secretary. The division safety committees were as a general rule, composed of the following men with the superintendent of the division as chairman; master mechanic, trainmaster, assistant engineer, supervisor of B. & B., one superintendent of track, one road foreman of engines, station agent, passenger conductor, freight conductor, passenger brakeman, freight brakeman, engineer road service, engineer yard service, fireman road or yard, yardmaster, bridge foreman, section foreman, locomotive foreman and car foreman. At Montreal, Toronto, Detroit, Port Huron and Buffalo, there were also appointed terminal safety committees organized along the same general lines as a division safety committee. In addition to these there were shop safety committees, so that the whole organization of the road in its various branches was well represented in the safety first movement. In brief, this resulted in the organization of twenty-five different safety committees composed of about 600 members of which 500 were employes. In addition to the work of these committees, a large amount of literature was distributed by the General Safety Committee bearing on the general subject of greater safety. Copies of all this literature has been distributed in such a manner as to be brought to the attention of every employe of the road who would read.

Since the organization of the various committees, it has developed that about 400 unsafe physical conditions are being corrected each month and about the same number of employes are being cautioned by the members of the Committee against unsafe practices. In the latter work, a form which has been prepared by the General Safety Committee has proved of great value. This form calls for frequent reports on the safety work from the members of each division Safety Committee, and as there is a natural competition between the members of each Committee and between the various Committees regarding the development of this work. it leads to an enormous amount of constructive information being supplied the Central Safety Committee, who, in turn, is able to disseminate the work of each Committee in order to stimulate intelligent progress in the general movement. For example, the following were among the various activities reported along safety lines between September 1st and September 10, 1913, inclusive:

"September 1st—Shop and trainmen riding to work on pilot of engine. Cautioned them upon the risk which they were taking and asked them not to repeat the practice."

"September 3rd—Saw engine foreman in yards go between moving cars to pull pin with hand. Called his attention to rule 254 which forbids this, told him he could not afford to take such



First illustration shows employe walking between moving cars, and second trainman leaning far out from moving train and liable to be struck by side obstruction. Both dangerous practices.

chances and requested him not to repeat the offense."

"September 7th—While walking through yards saw workman tearing up old planks and throwing same too near track. Explained the danger of injury from this source to the foreman who said he would move the material and not put any more in such position."

"September 10th—Found cover from catch basin in yards removed. Replaced it and called matter to the attention of section foreman."

These are examples of the reports that are constantly being made on the blanks referred to. Members of every Committee are encouraged to be personally active in the interest of safety and to turn in as lengthy a report as necessary at each meeting. Attention is called to the fact that "little matters" such as referred to above, are just the things that are causing large numbers of injuries and that to correct them means a decided decrease in the casualties daily occurring in railroad work.

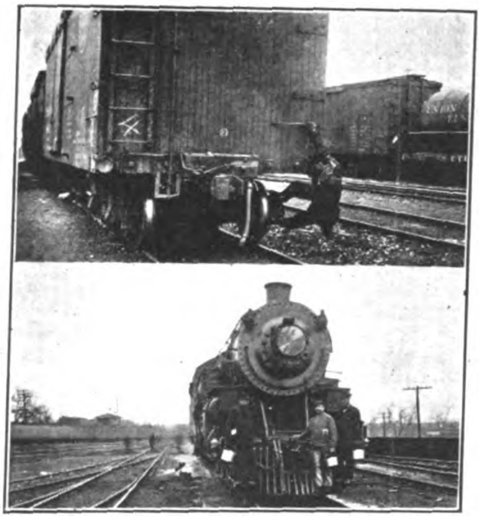
The results which have thus far been obtained on the Grand Trunk through the prosecution of this safety work have been extremely gratifying. It was not until September, 1913, that the Committees were thoroughly organized and the work well under way. During the first six months of the effort, that is, during the last four months of 1913, and the first two of 1914, there was a decrease of 46.6 per cent in the number of employes killed and a decrease of 16.4 per cent in the number of employes injured, as compared with the casualities which occurred during the last four months of 1912 and the first two months of 1913.

The employes generally realize how important this work is to their individual welfare and are enthusiastic in their efforts to promote it. Not only has there been a great reduction in personal injuries but also a great falling off in damage to equipment through a more careful handling of rolling stock. This is strikingly indicated by the following extract received by the General Safety Committee from L. H. Nolan, superintendent of terminals, at Detroit, Mich.:

"For your information I attach herewith a statement from Mr. C. Bradley, yardmaster, West Detroit yard, which shows that 46,070 cars were handled during the month of January, 1914, with no damage done to drawbars."

Mr. Nolan's letter also reports a decrease of nearly fifty per cent in the damage to equipment in general which he attributes largely to the greater safety movement. With such results as these it is self-evident that the greater safety movement is not only conserving human life but is saving no inconsiderable sums of money for the carriers as well as tending to generally improve the operating service. It is a movement in which every employe can take a legitimate interest and one which, now that it has become more thoroughly understood, is receiving their enthusiastic support.

The accompanying illustrations are examples of the many used by Mr. Bradshaw in his illustrated lectures.



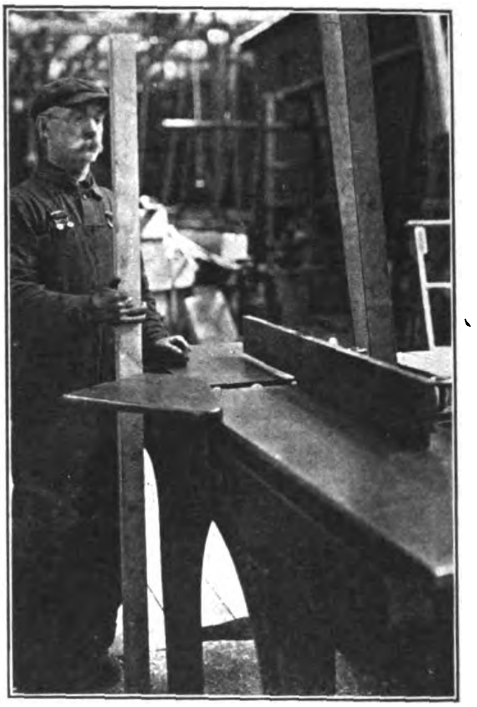
First illustration shows unsafe method of riding a car, and second, shows men riding on engine tender through which practice many are killed annually.

The Development of Safety First Work on the Boston and Maine.

S. T. WATKINS, general secretary of the Safety First Organization of the Boston and Maine Railroad has submitted the following interesting account of the development of the safety movement on his Company's lines:

Safety First work was started on the Boston and Maine Railroad, November 8th, 1913, when a Central Committee was formed composed of all the general officers and a general secretary appointed, who gives his whole time to the organization. This was followed by a mass meeting at terminal and junction points over the entire system. These meetings were addressed by the division superintendent, one or more general officials, and the working plan of the organization was explained by the general secretary. An opportunity for asking questions and discussion was a feature of these meetings. A brass band composed of employes of the Boston & Maine Railroad volunteered their services and assisted at most of the meetings. Special trains were run for the accommodation of employes, whose appreciation of the privilege resulted in great and enthusiastic gatherings; probably the largest number was at the Concord, N. H., meeting, where it was estimated more than 1,000 men were present. Committees were formed on each division and in each shop, made up of permanent and rotating members, the permanent members being the superintendent and other division officers; the rotating members—serving for six months—being chosen from the ranks. These Committees consist of from fifteen to twenty members and, as far as possible, all branches of the service are represented. These Committees meet one day each month, their time and expense being paid by the Railroad. Cards have been distributed over the entire system on which employes are invited to report any unsafe condition or unsafe practices. These cards are carefully gone over by the Committee at their monthly meetings and necessary action taken. The Central Committee meet once each month, and handle such matters as are referred to them by the Division Committees and adopt such methods as seem advantageous to the work. The months of November and December were used in perfecting the organization, so that the actual work began about January 1, 1914.

The response from the men has been such as to insure the success of the movement, and the Committee have had all they could do to correct the items reported. The encouraging features are that not only unsafe conditions, but unsafe practices, are being reported and the men in talking about Safety First and seeing the corrections made are becoming more careful in their habits: to illustrate, Safety First Card No. 55 states that opposite a certain station a tie was lying so near the track as to be dangerous to trainmen in the dark. The chairman of the Committee upon receipt of this card immediately notified that agent regarding the contents of the card and requested not only that the matter be corrected, but that he be informed as to who was responsible for having the tie where it was. The agent in seeking for the information as to who was responsible showed the correspondence to the section crew. They made inquiries and found that the crew of a certain freight train in doing shifting there a few nights previous, had used this tie to stake cars with and dropped it where they had used it. All this information was returned to the chairman of the Committee, who immediately forwarded it to the conductor of the freight crew and requested the name of the man who used the tie. The conductor interviewed his crew and found a man who said he did take a tie from the pile and used it to stake cars with, but that when he had finished with it he carried it over and laid it down beside a fence and did not drop it opposite the rail.



Simple but effective guard employed by Boston and Maine on buzz planer.

Now this card accomplished not only the picking up of this tie, but the agent, the whole section crew and all the train crew by this agitation and correspondence were educated along the lines of Safety First, and the nature of the card was such that even the man who was responsible for having left the tie where it was could readily see by the correspondence that the safety of himself and his fellow workmen was the end in view.

During the first three months of the year we had about 800 items reported, of which, in spite of the snow and cold weather during January and February, nearly 700 were corrected. The men in our shops have been especially active, and marked improvement has been made in safeguarding the machinery. Gears have been cased in and grinding wheels, belts, band saws and buzz planers guarded.

The one feature which seems to be most pleasing to shop men is the simple but effective guard placed on the buzz planer. The old type unguarded planer, with its square cutter with wide space between the table and the knife, was a menace from which very few escaped, but the simple guard shown in the photograph makes the planer absolutely safe. An upright spindle is placed on the side of the planer and a hard wood board ¾-in. thick is shaped so as to cover the knife; a sleeve is attached to the outside corner which slips down over the upright spindle by means of a spiral spring on this sleeve. This piece of board is continually pressed against the back of the planer and the man using the planer slips his material in between this board and the back of the planer. The spring continually presses the guard against the material in his hands and keeps the blade covered all the time, making this planer, as the man in the picture remarked even "Fool Proof." This man is in a position to appreciate this guard, having lost the ends of his fingers and thumb in this same planer some years ago.

It is too early to say very much about results, but in comparing the first three months of the last three years we find a decrease of fifty per cent in fatal accidents to employes this year, and there is a marked falling off in the number of serious injuries.

The rotating members of the Committee, as their term of office is drawing to a close, speak of it with regret and express a desire to continue to wear the Safety First Button. The willingness of the Committee to correct unsafe conditions and the good results shown lead us to believe that, although we have hardly made a start in the Safety First Work, the unsafe condition and unsafe practice will gradually disappear.

Safe Guarding the Health of Passengers.

THE Pennsylvania Railroad has issued an order that every employe engaged in the preparation of serving of food must undergo a physical examination at least every thirty days to determine whether they have even a tendency towards a communicable disease. This regulation includes the employes of dining rooms, dining cars and kitchens and the railroad's medical examiners, who are also officers of the State Board of Pennsylvania, will act as inspectors. It is also their duty to inspect dining cars and restaurants and kitchens; silverware, linens, cooking vessels and other utensils belonging to this branch of the service will come directly under their scrutiny. Every car and restaurant will be inspected at least once every month. The new regulations also require that every piece of meat or poultry be enclosed in an air tight bag before being taken from the refrigerator, thus insuring it protection against dust and other foreign matters.

Rewarding Enginemen on Southern Railway.

SOUTHERN RAILWAY engineers who have made exceptionally good records in keeping their locomotives in good condition are to be honored by having their names painted on the panels of their cabs. In announcing this new plan, Vice-President and General Manager E. H. Coapman states that it has been adopted as a mark of Southern Railway's appreciation of the interest which its engineers have taken in the condition and appearance of their locomotives. Southern Railway practice is, as far as possible, to allow each regular engineer to have his individual locomotive. The engineers feel a great personal pride in the appearance of their locomotives and many of them have been beautifully decorated in which the Company has co-operated with the men. As a result of the attractive appearance of Southern Railway locomotives, they have attracted wide-spread attention and much favorable comment. Under the new arrangement each engineer who has run an individual locomotive for a stated number of miles, rated according to the class of the engine, without going into the shop for general overhauling, will have his name placed on the cab panel. The arrangement was effective July 1st, but mileage made during the past two years by engineers running individual locomotives will be applied.

Practical Education of Railroad Employes.

TO broaden the knowledge of its officials and give them the benefit of a thorough training with respect to the methods of administering the affairs of the company in the general offices at Baltimore, the Baltimore and Ohio Railroad has inaugurated a plan of putting its division officers through a course of employment which will equip them for promotion to positions of greater responsibility. Officials in the operating branch of the service, including assistant superintendents, train masters and, in some instances, their subordinates, under the new arrangement are transferred to Baltimore so that they can study the problems of operation from the viewpoint of the general officers. While the staff officials are thus engaged their subordinate officials discharge the regular duties of the office, which has the double advantage of equipping the men lower in rank to qualify when vacancies occur.

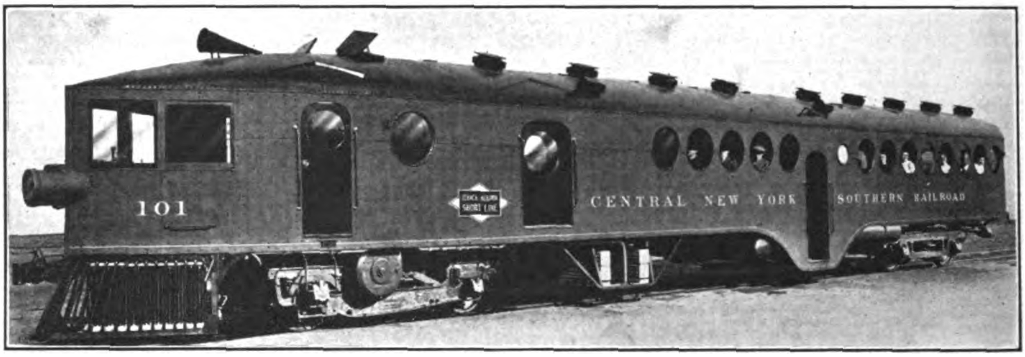
The officials who take the course in the general offices are employed for a period in the transportation department, in maintenance of way work, in the motive power office, the accounting, statistical, tonnage, discipline, employment, station service, rates of pay and other bureaus of the operating service, so that when they return to their respective divisions it will be with a general knowledge of the relation of their work to the operation of the property. Several officials are in the Baltimore offices constantly, and their places are filled when they go back to their regular duties.

Mechanical

Self-Propelled Freight-Passenger Car for Minneapolis & Northern Gasoline Motor Railway.

THE Minneapolis & Northern Gasoline Motor Railway has recently purchased a gasoline motor freight car from the McKeen Motor Car Company which is being used for freight and express service between Minneapolis and Anoka, Minnesota. It is a semi-convertible car which, during periods of heavy passenger traffic, can be used for transportation of passengers—removable seats and chairs being installed for that purpose.

It is equipped with the McKeen Motor Car Co., Type "A" motor truck in which has been incorporated many of the important fool-proof and economic features of the latest model Type "C" Motor Truck. The air brake system has a special Gregory motorman's valve for operation of straight air on motor car and automatic air on trailers.



McKEEN MOTOR CAR, ONE OF A NUMBER RECENTLY CONSTRUCTED FOR THE CENTRAL NEW YORK SOUTHERN RAILROAD.

The car's length over end sills is 45 feet while the total length is 52 feet 2 inches.

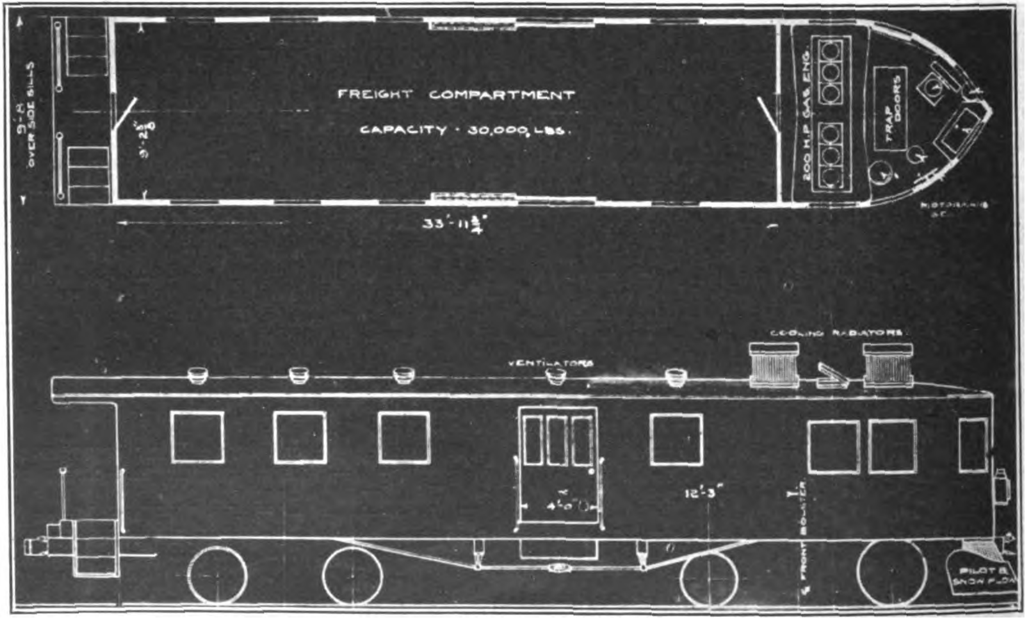
The accompanying floor diagram and side elevation illustrate the general design of the car, from which it will be noted that the front end is wedge shaped and the rear end has a platform for passengers ingress and egress. The McKeen depressed center side entrance is not a feature of this car, inasmuch as its use is chiefly for freight and express service. The car structure consists of a metal underframe, and continuous two-inch grooved steel combination side posts and carlines extending from side sill to side sill with metal diagonal bracing. The outside and inside wall sheathing is of 13-16-inch fir. The floor is of 1⅝-inch fir. Main dimensions are:

Length over end sills, 45 ft. 0 in. Length over platform, 49 ft. 0 in. Length over all, 52 ft. 8 in. Width over side sills, 9 ft. 8 in. Width over sheathing, 9 ft. 9⅝ in. Width over all, 10 ft. 4⅛ in. Width inside, 9 ft. 2⅜ in. Length freight compartment, 33 ft. 11¾ in. Height, rail to roof, 11 ft. 11 3-16 in. Weight 56,000 lbs.

The same Company has recently delivered two 1914 model "C" engine motor cars to the Central New York Southern Railroad, Ithaca, New York. This line, extending between Ithaca and Auburn, New York, 39 miles in length, was formerly the New York, Auburn & Lansing Railroad, the corporate name of which was changed upon the recent elimination of the receivership.

Steam equipment, heretofore providing the passenger service, has in accordance with the reorganization plans, been displaced by these 70 ft. motor cars, which action was considered of paramount importance in adopting ways and means of operating the passenger schedules attractively, economically and profitably.

The motive power machinery of the cars is the McKeen Motor Car Company's Type C, latest model, foolproof, encased, 200 horsepower, gasoline engine and mechanical transmission,



GENERAL PLAN OF FREIGHT MOTOR CAR CONSTRUCTED BY THE McKEEN MOTOR CAR COMPANY FOR THE M. & N. RAILWAY.

similar to the equipment furnished the Bessemer & Lake Erie, Soo Line and Sunset Central Lines, description of which was published in the "Railway World" in the January, 1914, issue.

Special features with which these cars are equipped are:

The Warner Railway meter which is so constructed as to register the mileage (ahead and backing up) per trip in addition to total mileage covered.

Pneumatic gong ringer.

Steam connection for heating cars in winter when not housed at terminal.

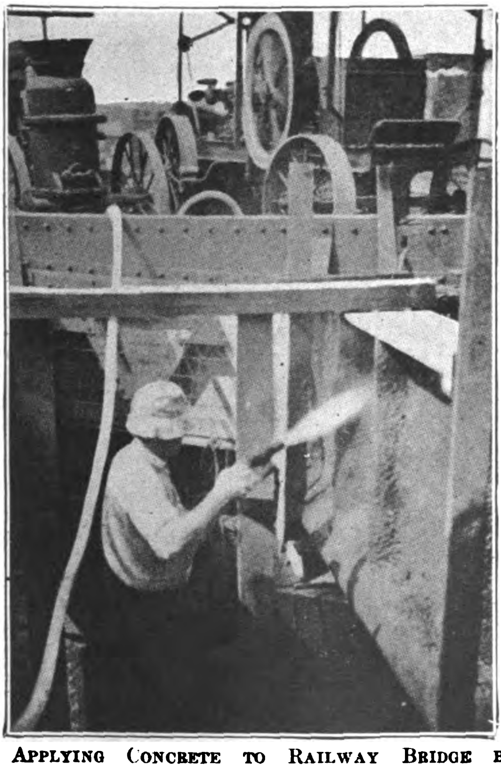
Rear door in passenger compartment for communication between motor car and trailers.

Conductor's brake valve and pedal operated whistle in rear for use of conductor when backing up.

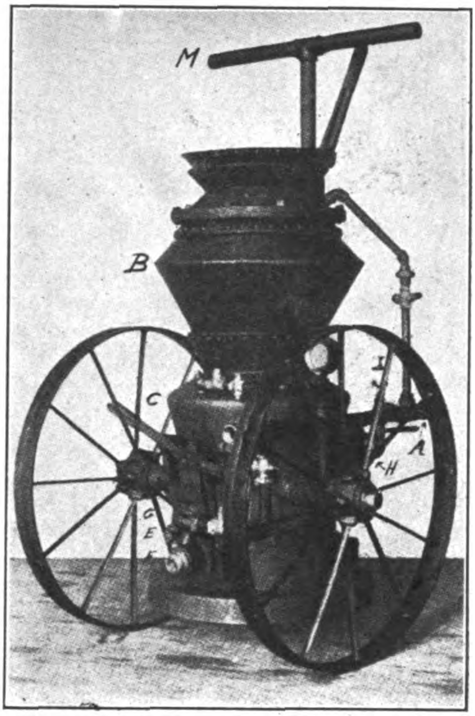
An illuminated indicator on rear similar to observation platform indicators on first class passenger trains.

Applying Concrete to Structural Steel.

THE gun-crete method of applying concrete to structural steel is shown in the accompanying illustration. This system is now extensively used for the encasing of steel bridges and other structural work as a protection against rust and fire. It is also employed for the lining of tanks, reservoirs and for the fire-proofing of wooden trestles. Mr. Carl Webber, the president of the Gun-Crete Company, is a concrete engineer of national reputation and is the inventor of the reinforced concrete chimney of which thousands have been built in this and foreign countries.



Applying Concrete to Railway Bridge by Means of Cement Gun.



Modern Type of Cement Gun.

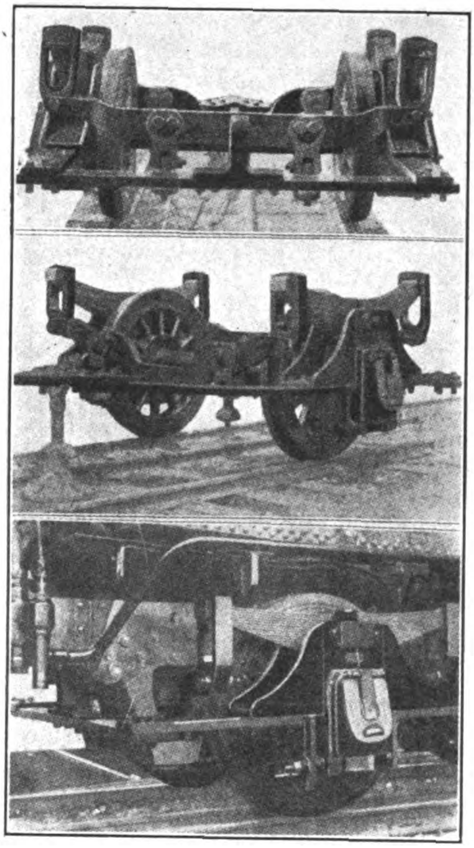
At the present time the Chicago Terminal Railroad engineers are covering their forty bridges and viaducts with gun-crete, and a large viaduct at Little Rock, Ark., belonging to the Iron Mountain Railway Company, is being treated in a similar manner. All of the steel work on these viaducts is being coated with gun-crete from 1½ to 3 inches in thickness and the work is applied as shown in the illustration.

At the New York Grand Central Terminal Station, all of the steel work in the lower levels, approximately 4,000,000 square feet, has been covered with gun-crete reinforced with Clinton wire mesh and the steel work of several round houses has been encased with gun-crete in order to protect it against the deteriorating action of the locomotive gases. The application of concrete to coal bunkers is also found extremely beneficial as the sulphur in the coal has a bad effect upon the steel work on such bunkers unless lined in the manner indicated. In this event, they are protected indefinitely.

A New Trailing Truck for Locomotives.

THE Austin improved trailing truck which is manufactured by the Lima Locomotive Corporation, Lima, Ohio, contains a number of new features and is designed with the view of improving the action and maintenance of trucks applied as trailing wheels. The suspension cradles system of cross equalizers, while the rear is attached to the outside spring hangers and in turn suspended from a positive fulcrum by heart-shaped links which are somewhat in the form of universal couplings. The lower portion of these links has a spherical head which allows a twisting movement in all directions and also allows a transverse radial motion for the entire cradle.

The first knuckle joint above this spherical end



Two Views of the Austin Trailing Truck, with a Third, Showing Its Application to Locomotive.

allows a fore and aft movement, so that when the truck radiates the apparent lengthening and shortening of the side members is fully accounted for. The transverse movement of the cradle is governed at the bottom by the spherical head, but at the top by two pins connecting the heart links with the cradle. These pins give a positive bearing while the engine is on a straight track and assure stable equilibrium on account of their three point suspension effect. When transverse movement on the cradle occurs, the heart links radiate from one or the other of their pins, according to the direction of movement and always tend to recenter by falling back on the double pins; the condition of the link while raised on one pin being always one of unstable equilibrium. The truck is thus a gravity suspension truck, and is similar in its action to any other positive heart-shaped link, such action being well demonstrated by front trucks having this type of bolster suspension.

By the employment of this truck, the rear end of the engine is held in alignment with the drivers by the force of gravity instead of being held by the more or less capricious action of helical centering springs. The cradle on the front of this truck is essentially the same as the one described at the rear, except that it connects with the driving equalization through the medium of the equalizer located at the back of the rear drivers. Particular emphasis is placed upon the fact that this cradle is not restrained by any jaw or contrivance on the frame and is therefore subject to no tendency to nip off outside the frame.

When this truck acts on a curve there is very little angular stress on any one component member of the cradle construction, as transverse flexibility occurs not only at the spherical end of the heart link but also at the top or centering end and again at the outside connection of the cradle to the spring hanger. These trucks have been observed on 23-degree curves, and their action, it is stated, is remarkable in this particular, the compensating effect of the members of the cradle being particularly noticeable. The angular position of any one member is slight, as the component members of the cradle adjust themselves in the manner described.

Vanadium Steel in Locomotive Construction.

THE accompanying chart shows in an interesting manner the development during the last six years in the application of vanadium steel and iron to locomotives. As late as 1908, this material was specified on only fifty locomotives. In 1913, over eleven hundred locomotives had vanadium parts. During the present calendar year up to May 15th, vanadium steel has been specified on 349 new locomotives. This chart which appears in a recent issue of the *Railway Review* is plotted from official returns from the locomotive builders to the railroads and from statistics as to the annual locomotive output published in the railroad technical papers.

These latter statistics, on which the percentage curve is based, include, of course, all classes of locomotives from Mallets to contractors' "dinkeys."

Considering only what may be classed as heavier power for which vanadium steel is chiefly advocated or considered, the percentages would be much higher than those shown in the chart. For

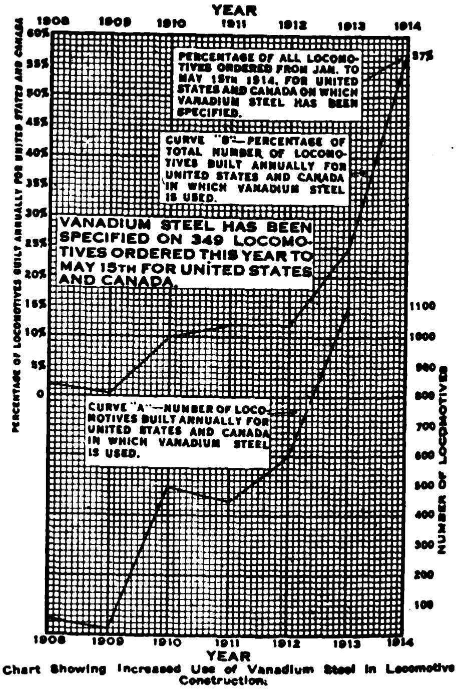
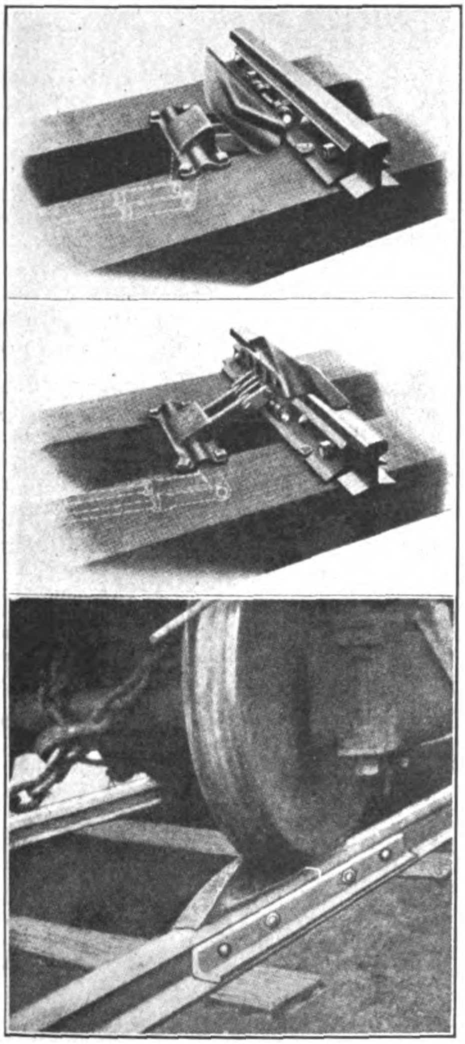


Chart Showing Increased Use of Vanadium Steel in Locomotive Construction.

example, statistics show that last year this material was specified on 48 per cent of all the locomotives weighing over 225,000 pounds built for the United States and Canada. The curve showing the number of locomotives having vanadium parts includes only new power and does not cover the large number of locomotives to which vanadium steel parts have been applied in repair work. It is significant that this development has taken place during a period in which there has been greater curtailment by the railroads in their expenditures than in any other equal period during the past 15 years. This indicates that, while the use of vanadium steel as a locomotive material is in the first stages of development, it has passed far beyond the experimental stage and on many roads is now considered as standard for certain parts for heavy power.



Three Views of the Q and C Derail.

In the first, the rail is shown clear; in the second, the device is set for derailing and in the third, it is shown in the act of derailing a wheel.

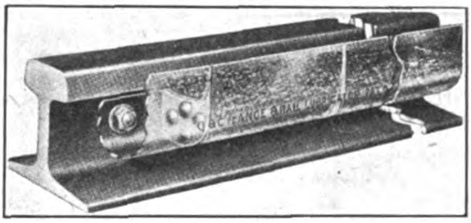
A New Derail Device.

THE Q & C Company of New York and Chicago has recently placed upon the market what it terms a "$5.00" derail as shown in the accompanying illustrations. This derail may be connected with interlocking, as shown in the figures one and two or may be connected with wires or pipes so as to be turned by the movement of the switch stand or it may be turned by hand. It is intended for employment on side tracks to prevent cars from running out and fouling the main line.

The device itself consists of one steel casting and two eye-bolts, the latter being adapted to be used in place of two bolts at a joint splice. The casting can be made to order, to fit the spacing of existing joint bolts. It can be applied, therefore, very easily, and without drilling of the rail, by substituting the two eye-bolts for two track bolts, and without the use of spikes. The height of rail and size and spacing of the joint bolts are all the data required for making the device to order; and it can be made in lefts and rights. It is operative under all weather conditions and lies so low that it does not interfere with snow flangers.

A Rail and Flange Lubricator.

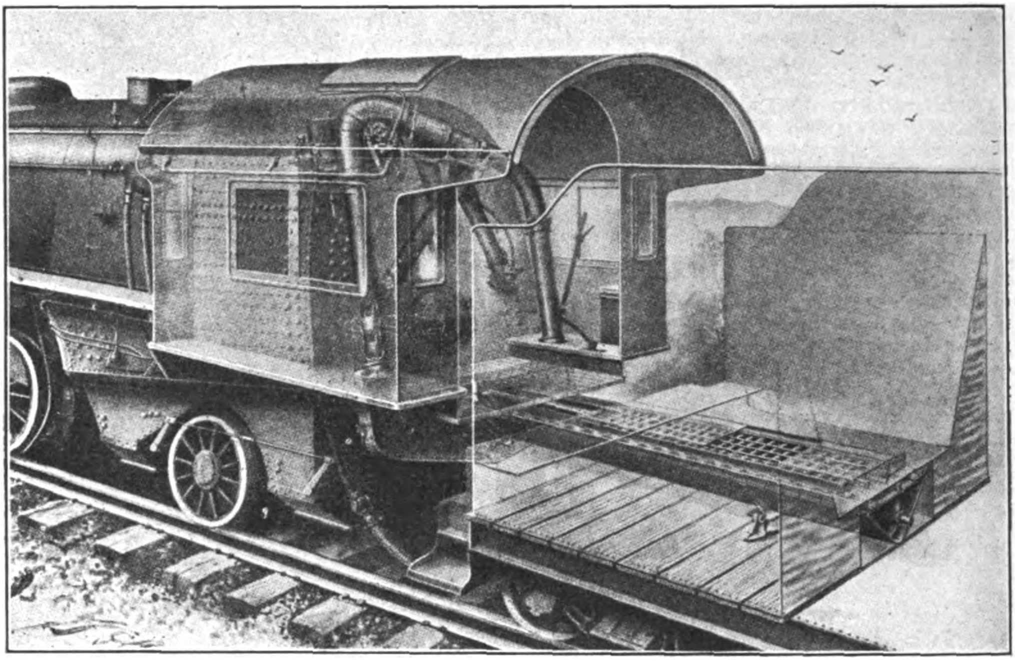
IN order to minimize the friction between the rails and the wheel flanges on curves to reduce both the rail and flange wear, a new lubricator has been designed by the Q & C Company, New York, N. Y., for application to the rails on the tangents approaching the curves. Each of these troughs which are of the form shown in the accompanying illustration, are 12 feet long and made up in sections. They are packed full of discarded cotton waste that has been removed from journal boxes, this waste being soaked with ordinary black oil. As this waste comes up within a half inch of the top of the rail, the flange of each wheel passing over the trough gathers enough oil to lubricate the rail and flange.



Device Employed for Lubricating Rails on Curves and Wheel Flanges.

New Type of Locomotive Stoker.

THE Locomotive Stoker Company, of Schenectady, New York, has recently brought out a new type of its Street locomotive stoker which is designated as Type C. This type differs from Type B in having a variable seat elevation for driving the engine and a friction clutch for making connection between the engine and the elevation. These improvements give the fireman an absolute control over the quantity of coal to be conveyed to the fire box. The variable speed engine has seven different speeds and is controlled by a small lever on the front of the crank case. By setting this lever in a given notch a fixed feed of coal is obtained and is maintained regardless of the hold of the engine. The friction clutch enables the fireman to stop and start the feed of coal instantly at any time. The elevator engine is allowed to run continuously and by throwing in the clutch lever, the elevator can be started and the feed of coal to the fire box begins instantly as, under normal conditions, the elevator buckets



THE NEW TYPE OF STREET STOKER AS APPLIED TO LOCOMOTIVE.

are full of coal. Throwing the clutch lever out stops the feed of coal instantly.

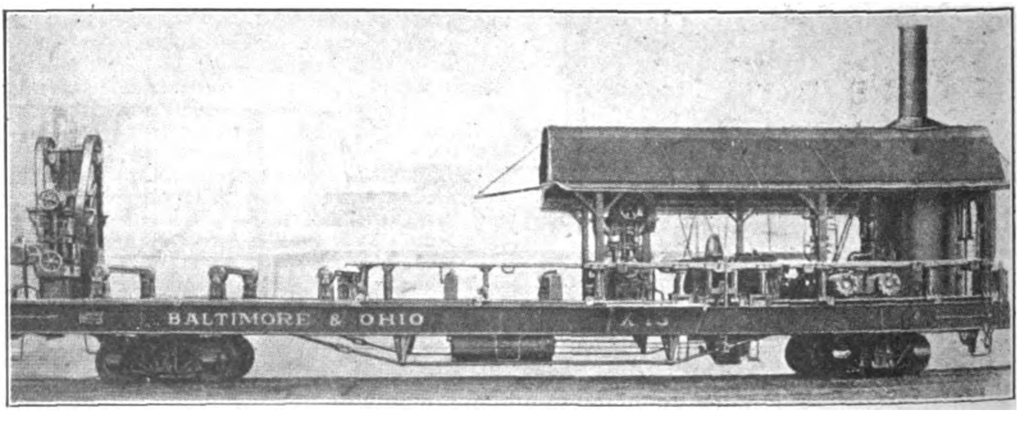
New Rail Sawing Machine Purchased by the Baltimore and Ohio Railroad.

THE accompanying illustration shows a new rail sawing machine which has recently been purchased by the Baltimore and Ohio Railroad and has been put in operation in a plant temporarily located at Lodi, Ind. A skid way has been arranged at a height somewhat above the floor of the car which affords storage space for the rails as they are unloaded and at the same time keeps them at a height which makes subsequent hoisting unnecessary.

A rail tongs suspended by a chain from a traveler on an overhead rail is shown in the illustration, but this is not used in the present plant. The rail to be sawed is laid over onto the set of carrier clamps, shown in the illustration, ranged along the side of the car, from the rear or boiler end, forward. These clamps are automatic and actuated by compressed air. As the rail is put onto them they grip it tightly, and then move it bodily over against the saw.

The saw is of the toothless or friction type, consisting of a water-cooled disk revolving at high speed, and the rail is severed in from 10 to 20 seconds. The two halves of the rail are next moved along lengthwise, so that its other ends may be sawed. They are then passed down along the rollers, and the ends successively presented to the two drilling machines, each of which drills its three holes in the web of the rail simultaneously. The drilling operations do not obstruct the movement of the rails at the saw, so that the capacity of the machine is one rail every thirty seconds, although, in practice, it does not often work actually to capacity on account of inability to furnish a constant supply of rails to the saw.

The housing of the principal part of the mechanism has hinged sides which may be let down to completely enclose the machinery, when not in use.



BALTIMORE AND OHIO RAIL SAWING CAR.

Electrical

Tractor Trucks for the Butte, Anaconda and Pacific Electric Railway.

FOUR additional electric freight locomotives have been ordered from the General Electric Company by the Butte, Anaconda and Pacific Electric Railway. Three additional tractor trucks have also been ordered to be used in combination with the standard locomotive units in order to make these locomotives suitable for low speed spotting service. These trucks increase the tractive of the standard unit to the equivalent of 120-ton locomotive and will be used especially for spotting cars and for low speed switching in the yards at Butte, Montana.

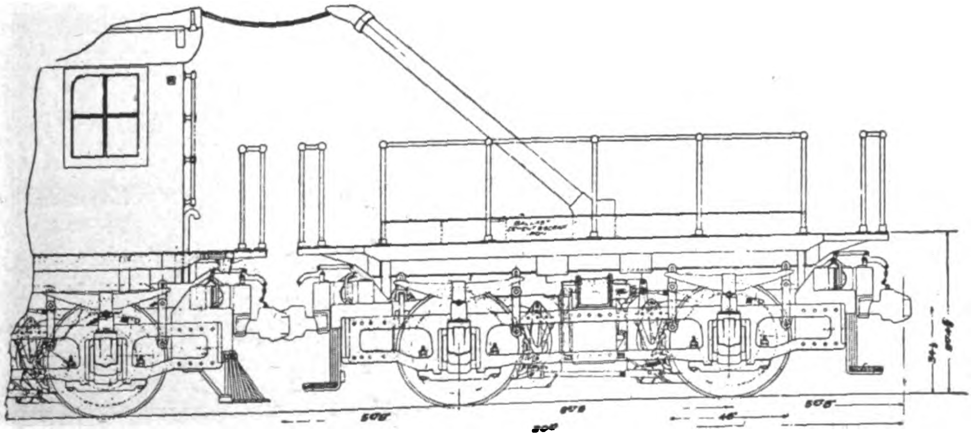
The three two-axle tractor trucks will each be equipped with two GE-229 motors insulated for 2,400 volts, similar to those on the locomotive. Cable and connecting plugs will also be provided for operation with the locomotives, so that the truck motors will be operated with the other motors from the same controller without change in the main control. The number of stops in the control will therefore be the same as on the locomotive; ten points with six motors in series and seven with two sets in multiple, each set consisting of three motors arranged in series. In operation, each of the tractor truck motors is connected in series with one pair of motors on the locomotive, making a six axle, six-motor unit which will furnish 50 per cent more tractive effort than the 80-ton locomotive alone, at about two-thirds speed, without increase in current input. The characteristics of the 120-ton unit are as follows.

Total weight on drivers	240,000 lbs.
Starting tractive effort at 30 per cent coefficient	72,000 lbs.
Tractive effort at one hour rating of motors	43,200 lbs.
Speed at one hour rating, motors in series	4.8 m. p. hr.
Speed at one hour rating, motors in series parallel	10.3 m. p. hr.

Mechanically these trucks are similar in construction to the trucks on the 80-ton locomotives. Instead of a locomotive body, however, a platform is supplied, built up of channels, angles and plates which are supported on the truck transom. Struts are provided at the corners to secure the platform to the side frame. Ballast, consisting of cement and iron punchings of sufficient quantity to bring up the weight of the truck to 40 tons, is placed between the center channels of the platform in a box-like structure built for this purpose. A passageway protected by a hand rail extends along each side of the platform.

In the center of the platform there is a crane which extends at an angle from the platform floor, suitable for supporting the eight cables necessary for connecting the motors of the tractor to those on the locomotive. This crane can be revolved 180 degrees so as to permit the coupling of the locomotive to either end of the track. When in operation, this crane is rigidly locked in position. Air brake equipment with the necessary triple valve, auxiliary reservoir, etc., is also installed on the truck.

Each of the four locomotives now under construction is provided with a junction box placed near the roof above the front window. This is designed so as to permit the removal of couplers with a small amount of labor and time, so that the tractor may be connected to any one of the freight locomotives which is provided with this junction box.



Tractor Truck Used as Auxiliary to 2400-Volt Direct Current Electric Freight Locomotive of the Butte, Anaconda & Pacific Ry.

Terminal Improvements

Pennsylvania Railroad's New Girard Point Elevator.

REFERENCE was made in the January issue of the "Railway World" to the new Philadelphia grain elevator of the Pennsylvania Railroad, then under construction at Girard Point. This new elevator, which is now complete and in full operation, was constructed at a cost of $1,200,000 and has a capacity of 1,100,000 bushels of grain. It is made entirely of concrete and steel, and the facilities it affords represent the last word in scientific practice. It is expected to prove the most rapid plant ever built for transferring grain from rail to water.

The new elevator is located at the mouth of the Schuylkill River within a few hundred yards of the main channel of the Delaware River. Towering high above the flat lands which surround it, it is the first sign of Philadelphia's industry which presents itself to voyagers coming up the Delaware. The elevator proper sits back 500 feet from a pier 900 feet long, on both sides of which vessels can dock. Grain will be delivered to ships for export by a conveying gallery, which extends out to the end of the pier.

The elevator has an unloading capacity of 240 cars per day of ten hours. It has sufficient trackage to accommodate 400 cars. The capacity and flexibility of the receiving and shipping plant is further increased by a six-track concrete shed, two cars long, permitting the unloading of twelve cars at once. The shipping gallery has a capacity for loading ocean steamers of 650 feet length, at the rate of 60,000 bushels per hour.

In general the elevator plant consists of a working house for the machinery, track-shed, storage house or annex, and conveyor gallery, pier, power house and drier. Grain is received in the track-shed receiving pits, and after unloading is carried to one of four receiving elevator legs and elevated to the garner over a receiving scale, from where, after weighing, it is spouted to bins in the working house for cleaning or shipment to vessels, or is carried on a conveyor belt to the annex for storage. Shipping facilities to vessels are provided by four belt conveyors from the working house to the pier.

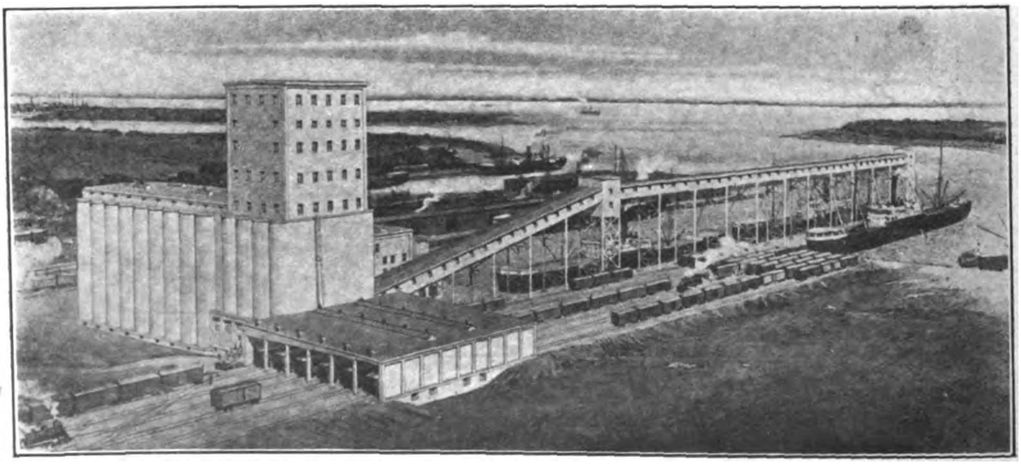
The new elevator is equipped with one of the largest grain driers in the country. It has a capacity of 3,000 bushels per hour. The plant also has the four largest grain cleaning machines in the country; 20,000 bushels can be cleaned in one hour.

To the east of the working house and connected to it by a concrete tunnel and bridge is the storage annex, consisting of fifty-four 13,000 bushel reinforced concrete circular tanks with a basement and cupola. The forty intermediate spaces have a capacity of about 3,300 bushels each. The storage annex has a capacity of more than 800,000 bushels.

Missouri Pacific's New Grain Elevator at Kansas City.

WHEN the additions and alterations to its huge grain elevator at Kansas City now under way are completed, the Missouri Pacific-Iron Mountain Railroad will have one of the largest plants of its kind in the world. As originally constructed, the elevator consisted of ten concrete circular storage tanks, with a capacity of 80,000 bushels each, or 800,000 bushels in all, and the elevator building proper, with a capacity of 200,000 bushels, a total plant capacity of 1,000,000 bushels. Forty additional concrete circular storage bins, 22 feet in diameter and 84 feet deep, with a capacity of 25,000 bushels each or 1,000,000 bushels all told, are under construction, besides 19 smaller bins, with a capacity of 7,000 bushels each or 133,000 bushels total.

The latter are what is known as "Interstice" storage bins, and they will occupy the space formerly left vacant between the circular bins of this style of elevator. The elevator will have a total of 69 units of storage space, with a capacity of 2,133,000 bushels, which is more than double its present capacity. Two hundred men



THE PENNSYLVANIA RAILROAD'S NEW GRAIN ELEVATOR AT GIRARD POINT, PHILADELPHIA.

have been kept at work on the plant, night and day, for the past two months. It is expected that the improvements will be completed and the elevator in operation by August 1st, in time to handle a good share of the heavy wheat crop now being harvested in that section of the country.

Brooklyn's Marginal Railway Plan Revised.—Revised plans for the Brooklyn marginal freight railway have been reported to the Board of Estimate by its Committee on Port and Terminal Facilities. Material changes have been made in the original plan and the Committee has expressed the opinion that it will be necessary to ultimately carry the route further north, probably for a considerable distance beyond the navy yard. In order to provide railroad facilities along the waterfront between Van Dyck Street and Hamilton Avenue, it is proposed to construct a ramp from the elevated structure west of Van Brunt Street, reaching the surface in Van Dyck Street, between Conover and Ferris Streets. At this point connection can be made with the present surface layout on Ferris Street.

The Committee proposes also to acquire the so-called "Baltic Yard" of the New York Dock Company, lying between Harrison and Warren Streets, and west of Columbia Street. This area will provide float bridge connections for the northern end of the line.

A schedule was submitted by the committee showing the estimated cost of the railroad with the changes as proposed in the present report, together with a map prepared by the Commissioner of Docks incorporating the changes in the map adopted July 10, 1913.

The total cost is put at $3,831,000.

Increased Terminal Facilities on Long Island for Baltimore and Ohio.—An important addition to its facilities for handling business in the New York terminals will be made by the Baltimore and Ohio Railroad, when a new freight station will be opened at Long Island City on July 1st. It will be known as the Long Island City-Queensboro Terminal and will be located at the foot of Thirteenth and Fourteenth Streets. Current New York rates will apply to and from the new depot. Shipments in any quantity will be handled through the new terminal, which will have direct connections with other terminals in the New York harbor as well as with the entire territory reached by the Baltimore and Ohio and its connecting lines. The only exception will be the articles usually restricted from such terminals which will be handled as heretofore.

Enlarged Facilities at Mobile for Southern Railway.—To provide adequate facilities for the proper handling of its business through the port of Mobile, Southern Railway Company is arranging for a general development of its freight terminal and authority has been given for the construction of new freight houses, storage yard and engine yard.

The facilities for handling freight will consist of an out-bound freight house, 26 ft. x 410 ft.; an in-bound freight house, 40 ft. x 410 ft. with office 56 ft. x 134 ft.; cotton platform 40 ft. x 330 ft.; ribbon platform 12 ft. x 410 ft.; and necessary tracks, team ways, drainage and paving with adequate fire protection.

The work to be done in providing engine handling facilities will consist of grading, track work, cinder conveyor and the provision of drainage and water supply. A new storage yard with a 50 ft. track scale will also be provided.

The Southern Railway has also begun work on new and enlarged freight yard and shop facilities at Richmond and South Richmond, Va. The work in Richmond proper will include the removal of the present passenger depot at Fourteenth Street and the erection on its site of a new out-bound freight depot 40 ft. x 480 ft.; the conversion of one of the existing freight depots into an in-bound freight depot and the other into a tobacco warehouse; the rearrangement of existing tracks and the construction of new tracks to serve all old as well as the new facilities, and the necessary paving and curbing around the new freight house.

The new depot, which will be of brick construction, with tile roof over office part of the building and tar and gravel roof over the remainder, will be divided as follows:

First Floor—Offices 40 ft. x 40 ft.
Warehouse 40 ft. x 440 ft.
Second Floor—Offices 40 ft. x 150 ft.

Bids for its construction are now being solicited from contractors and work will be started as soon as the contract has been awarded and necessary building material assembled.

Another terminal improvement begun by this road is the construction of the first unit of a two-way gravity classification yard on property already graded at North Birmingham, Ala., to be known as Finley Yard, in honor of the late Mr. W. W. Finley, President, Southern Railway Company.

The track construction now under way is being handled by a special force organized for that purpose and will provide a receiving yard, gravity classification yard, a storage yard, and repair tracks. A yard office will also be built.

There will also be constructed a twenty-five stall round-house and shop buildings, a modern coal, sand and cinder handling station and track scales of heavy capacity. Complete arrangements will also be made for water supply, lighting, and fire protection.

The round-house will be of reinforced concrete construction with brick walls, roof of concrete joist and tile. Contract for its construction has been awarded to the Consolidated Engineering Company, of Baltimore, Md.

The construction of this first unit of Finley Yard, even with a large increase in traffic will provide adequate yard facilities at Birmingham for at least five years, and provision has been made whereby if it is deemed necessary at the expiration of that time, the capacity of the yard can be approximately doubled; which based on increase during the past five years will provide for the handling of business for a future period of from fifteen to twenty-five years.

The completion of these improvements will enable the Southern Railway to concentrate at Finley Yard, work which is now done at four different points scattered over a territory of ten miles, and will insure against yard congestion and promote an easy flow of traffic thereby resulting in increased efficiency in handling the heavy business of the Birmingham District and the great amount of through business passing through Birmingham.

Interstate Commerce Commission

Commission Issues Its Annual Report on Steam Railways.

THE following abstract is based upon the 26th annual statistical report of the Commission covering the fiscal year ending June 30th, 1913, made from the reports of carriers having operating revenues above $100,000. Returns of switching and terminal companies are not included. The Commission states that advance figures in this abstract may be slightly modified by revision before final publication.

MILEAGE.

On June 30, 1913, the roads covered by this abstract represented 244,418.49 miles of line operated, including 11,162.97 miles used under trackage rights. The aggregate mileage of railway tracks of all kinds covered by operating returns for these roads was 369,579.80 miles. This mileage was thus classified: Single track, 244,418.49 miles; second track, 26,270.55; third track, 2,588.68; fourth, fifth and sixth tracks, 1,964.06; yard track and sidings, 94,338.02. These figures indicate, for the roads under consideration, an increase of 8,628.36 miles over corresponding returns for 1912 in the aggregate length of all tracks, of which increase 3,157.59 miles, or 36.59 per cent, represent yard track and sidings.

EQUIPMENT.

It appears, from the annual reports submitted to the Commission by the roads covered by this abstract, that there were 63,378 locomotives in their service on June 30, 1913, an increase of 2,102 over corresponding returns for such roads for the previous year. Of the total number of locomotives, 14,396 were classified as passenger, 37,924 as freight, 9,834 as switching, and 1,224 were unclassified.

The total number of cars of all classes in the service of such roads was 2,445,508 (or 76,566 more than on June 30, 1912), which equipment was thus assigned; Passenger service, 51,700 cars; freight service, 2,273,564; company's service, 120,244. The figures given do not include so-called private cars of commercial firms or corporations.

Of cars in freight service, there were classified 2,273,289, as follows:

Description.	Number.	Aggregate capacity. Tons.
Box	1,032,585	35,607,134
Flat	147,541	5,151,054
Stock	78,308	2,421,827
Coal	871,339	38,314,920
Tank	8,216	327,727
Refrigerator	43,389	1,357,403
Other cars in freight service	91,911	3,798,080
Total	2,273,289	86,978,145

It appears that the average number of locomotives per 1,000 miles of line was 259, and the average number of cars per 1,000 miles of line, 10,005. The number of passenger-miles per passenger locomotive was 2,341,269, and the number of ton-miles per freight locomotive was 7,843,663.

The returns indicate that the number of locomotives and cars in the service of the carriers under consideration aggregated 2,508,886, of which 2,492,891 or 99.36 per cent as against 99.20 per cent in 1912, were fitted with train brakes, and 2,505,283 or 99.86 per cent as against 99.81 per cent in 1912, were fitted with automatic couplers. Of the 2,273,564 cars in freight service on June 30, 1913, the number fitted with train brakes was 2,266,162 and the number fitted with automatic couplers was 2,270,302.

EMPLOYES.

The total number of persons reported as on the pay rolls of the steam roads of the United States on June 30, 1913 (not including those in the employ of roads the gross operating revenues of which were reported as less than $100,000 or those in the service of switching and terminal companies) was 1,815,239, or an average of 743 per 100 miles of line. As compared with corresponding returns for June 30, 1912, there was an increase of 115,298 in the total number of such railway employes. There were 67,026 enginemen, 70,477 firemen, 52,086 conductors, 146,855 other trainmen, and 38,253 switch tenders, crossing tenders, and watchmen.

The complete report will include summaries showing the average daily compensation of 18 classes of employes for a series of years, and also the aggregate amount of compensation reported for each of the several classes. The total amount of wages and salaries reported as paid to railway employes during the year ended June 30, 1913, for the roads under consideration was $1,373,830,589.

CAPITALIZATION OF RAILWAY PROPERTY.

On June 30, 1913, according to the annual reports submitted to the Commission by roads having gross operating revenues of $100,000 or more, together with returns made in reports filed in behalf of their non-operating subsidiary lines, the par value of the amount of railway capital outstanding was $19,796,125,712. This amount includes capital held by the railway companies concerned, as well as by the public. Of the total amount of such capital outstanding there existed as stock $8,610,611,327, of which $7,231,515,045 was common and $1,379,096,282 was preferred; the remaining part, $11,185,514,385, representing funded debt, consisted of mortgage bonds $8,186,366,426; collateral trust bonds, $1,189,636,796; plain bonds, debentures and notes, $1,107,076,783; income bonds, $250,290,655; miscellaneous funded obligations, $82,858,275; and equipment trust obligations, $369,285,450.

Of the total capital stock outstanding for the roads under consideration, $2,836,023,744, or 32.94 per cent paid no dividends. The amount of dividends declared during the year (by both operating and non-operating companies represented in this statement) was $368,606,327, being equivalent to 6.38 per cent on dividend-paying stock. The average rate of dividends paid on all stocks outstanding pertaining to the roads under consideration was 4.28 per cent. No interest was paid on $1,128,776,748, or 10.44 per cent, of the total amount of funded debt outstanding (other than equipment trust obligations).

INVESTMENTS IN ROAD AND EQUIPMENT.

The figures presented under this caption include returns for investment in road and equipment, shown by the operating roads covered by this abstract, as well as by their subsidiary non-operating roads (leased, operated under contract, etc.). The expenditures for additions and betterments, as well as the expenditures for new lines and extensions, during the fiscal year 1913 are analyzed in the following tabular statement:

the year ended June 30, 1913, over the returns for 1912, as applying to the roads represented in this abstract, was 37,618,843,854. The number of tons carried one mile per mile of road for the year ended June 30, 1913, was 1,245,158, as against 1,110,811 for the preceding year. The average number of tons of freight per train-mile was 445.45. The corresponding figure for the preceding year was 410.26.

The average receipts per passenger per mile, as computed for the year ended June 30, 1913, for the roads covered by this statement, were 2.008 cents; the average receipts per ton per mile, 0.729 cent. The passenger service train revenue per train-mile was $1.35.555; the freight revenue per train-mile was $3.24.347. The average operating revenues per train mile were $2.45.387. The average operating expenses per train-mile were $1.70.374. The ratio of operating expenses to operating revenues was 69.44 per cent.

	Expenditures for additions and betterments.	Expenditures for new lines and extensions.		
Investment to June 30, 1913			$16,351,639,266	
Investment to June 30, 1912			15,874,579,626	
Increase 1913 over 1912				$477,059,640
From cash or other working assets	$329,511,772	$54,819,241		
From special appropriations	48,079,165	473,281		
Through issue of securities	162,597,278	63,692,746		
Not assigned to any of the above classes	5,801,127	10,263,251		
Total	$545,989,342	$129,248,519	$675,237,861	
Miscellaneous charges not classified			4,847,012	
Total expenditures during year			$680,084,873	
		Credits.		
Property retired or converted		$79,495,571		
Adjustments		5,058,790		
Difference between record value of grantor and purchase price of grantee in cases of roads sold, merged, consolidated, etc.		118,470,872		
Total			$203,025,233	
Net increase during year				$477,059,640

PUBLIC SERVICE ON RAILWAYS.

The number of passengers carried during the year ended June 30, 1913, by roads represented in this abstract was 1,033,679,680. The corresponding number for the year ended June 30, 1912, was 994,372,283. The increase in the number of passengers carried during the year over corresponding returns of 1912 was 39,307,397.

The passenger mileage, or the number of passengers carried one mile, reported by roads represented in this statement, was 34,575,872,980. The corresponding return for 1912 was 1,536,762,172 less. The number of passengers carried one mile per mile of road was 143,067, as against 140,393 for the preceding year.

The number of tons of freight reported as carried (including freight received from connections) by roads represented in this statement, for the year ended June 30, 1913, was 2,058,035,487, while the corresponding figure for the previous year was 1,818,795,630, the increase being 239,239,857.

The ton mileage, or the number of tons carried one mile, as reported by the carriers under consideration for the year ended June 30, 1913, was 301,398,752,108. The corresponding ton mileage as reported for the year ended June 30, 1912, was 263,779,908,254, from which it will be seen that the increase in the ton mileage for

REVENUES AND EXPENSES.

It should be noted that, as in the case of other figures in this abstract, the revenues and expenses shown below exclude returns for roads the gross operating revenues of which were less than $100,000 for the year. The operating revenues of the railways in the United States for the year ended June 30, 1913, herein represented (average mileage operated 242,657.12 miles), were $3,125,135,798; their operating expenses were $2,169,968,924. The corresponding returns for 1912 (average mileage operated 238,220.11 miles) were: Operating revenues, $2,826,958,366; operating expenses, $1,959,094,658. The following figures present a statement of the operating revenue for 1913 in detail:

Freight revenue	$2,198,930,565
Passenger revenue	695,987,817
Excess baggage revenue	7,607,802
Parlor and chair car revenue	715,566
Mail revenue	50,789,212
Express revenue	79,717,266
Milk revenue (on passenger trains)	9,057,591
Other passenger revenue	6,110,252
Switching revenue	33,248,734
Special service-train revenue	1,980,362

Miscellaneous transportation revenue	6,861,901
Total revenue from operations other than transportation	31,628,843
Joint facilities—Dr	1,054,003
Joint facilities—Cr	3,553,890
Total operating revenues	3,125,135,798

Operating expenses, as assigned to the five general classes, were:

Maintenance of way and structures	$421,232,395
Maintenance of equipment	511,561,363
Traffic expenses	62,850,113
Transportation expenses	1,096,252,745
General expenses	78,072,308
Total operating expenses	2,169,968,924

With minor eliminations from the figures given above, operating revenues per mile of line operated (including line operated under trackage rights) averaged $12,873 and operating expenses $8,939 for the year.

Commission's Report on New Haven System.

On July 13th, the Commission sent to the United States Senate a report which censures in a drastic and even bitter manner, the financial operations of the New York, New Haven and Hartford Railroad Company under the administration of Mr. Mellen and the Board of Directors which controlled the company's affairs at that time. The Commission holds that the New Haven directors were "criminally negligent" and indicates that it expects them to be prosecuted under the criminal statutes. With this in view, copies of the testimony taken during the investigation have been furnished to the Department of Justice and in order that State authorities may take action the Commission has also furnished evidence "concerning local occurrences in New York City to the district attorney for the proper district," while testimony relating to irregularities in Massachusetts and Rhode Island have been laid before the proper authorities in those States. The enormous amount of testimony taken during the investigation is summarized in the report which comprises thirty-nine printed pages with sixty additional pages of appendices, the whole making a document of more than sixty thousand words.

According to the Commission, the story of the "reckless and profligate" financial operations probably forms the most remarkable chapter in the history of American railroads and American financing. It tells of millions used like stage money; of corporations as pawns in a monster game with all New England's transportation as a prize, which led the New Haven in the ten years just passed from the height of prosperity to the point where a dividend has been passed, where a dissolution suit is threatening, and where criminal indictments of many of the directors who figured in its deals are at least a possibility.

Hampered by unwilling witnesses, by burned books and by all the mazes which lawyers invented to cover the trail, the Commission estimated that in the progress toward a monopolization of New England transportation the New Haven stockholders have lost between $65,000,000 and $90,000,000, but little of which they may recover.

The combination reared by the hands of Mr. Mellen and approved by the late J. Pierpont Morgan and William Rockefeller, the Commission finds to be clearly in violation of the Sherman anti-trust act and a monopoly in practical control of the transportation of five States.

That the refusal of J. P. Morgan to permit a full examination of the books of J. P. Morgan and Company in connection with that firm's dealing with the New York, New Haven and Hartford Railroad, brought the Commission's New Haven investigation to an end, is indicated in correspondence from J. P. Morgan and Interstate Commerce Commissioner McChord and Examiner David E. Brown, of the Commission, made public in an appendix in connection with the Commission's report.

The directors of the New Haven system are scored by the Commission, because, so the Commission says, they "actually or passively acquiesced in the efforts of the Mellen-Morgan-Rockefeller regime to extend the domination of this corporation over the whole transportation fields of New England"

These directors, the Commission asserts, were guilty of "a gross dereliction of duty and a breach of trust that was morally wrong and criminal in its fruits."

The Commission calls for their civil and criminal prosecution.

The report speaks of criminal mal-administration and negligence, asserts with positiveness that the directors knew they were perfecting an illegal combination and says that the dream of a transportation monopoly was unsound and mischievous. The New Haven, the Commission says, employed dummy directors, manipulated accounts, used questionable methods in increasing its own stock, paid the dividends of subsidiaries to make a showing and used many other devices to deceive the stockholders and the public. It dipped into politics, was a factor in "invisible government," made large campaign contributions to the dominant political parties, bought officials and tried to distort public opinion. All this it did, the Commission says, "to carry out a scheme of private transportation monopoly imperial in its scope."

Of all the millions lost to New Haven stockholders, the Commission estimates that possibly $8,000,000 may be recovered by proper action.

In its investigation the Commission found that the New Haven had 336 subsidiary corporations, many of which served no purpose except "an evil one."

The Commission defends its action in compelling Charles S. Mellen and other New Haven directors to give testimony. The Commission, it is set forth, proceeded upon the idea that it is better to expose wrong-doing even at the expense of giving immunity to a few witnesses than to leave facts uncovered, and thereby give immunity to all "not only as to prosecution but to the stigma of exposure as well."

Commission Denounces Pass Policy of Louisville and Nashville.

The Commission has sent to the Senate its answer to Senator Lee's resolution asking how the Atlantic Coast Line secured control of Louisville and Nashville, where there was an outright purchase of the Nashville, Chattanooga and St. Louis road, under what terms it was being operated and to whom free passes have been issued by the Louisville and Nashville.

During the year ended December 31, 1913, the Louisville and Nashville Railroad issued to or on account of members of legislative bodies and other public officials, attorneys, newspaper representatives and various other persons, 11,805 free passes, involving 4,577,928 miles of travel, the value of which was $130,839. For the same year 1913, at the request of like officials, 22,355 passes, involving 7,133,944 miles of travel, the value of which was $209,420, were issued.

In the list of those to whom passes were issued are included one United States Senator, two United States Representatives, other Government officials to the number of 139 passes, to State Senators, 1,556, State Representatives 2,183, other State officials 1,769, county officials 288, city officials 611, judges 89. The report that the aggregate value of the actual travel upon the passes which it was possible to establish statistically is $340,026.

Commenting on the free passes issued, the Commission concludes: "There is scarcely a walk of life which is not represented in this procession of recipients of passes, from the Federal bench to the local politician and the sheriff who summons the jury. The threads represented by these passes tie thousands of citizens to the carriers through improper relations. The lack of morality reflected by the facts here compiled is a menace to the institutions of a free people. These citizens who sell their influence, quite as much as though they accepted money bribes, seem to be as willing to be tied as the carriers are ready to tie them. Men pledge their influence quietly in the home, or school or club, in the professions, in business, in city councils, in administrative boards, in courts of justice, in legislative halls and at the polls."

Railroads to Report on Abandoned Property.

THE Physical Valuation Board of the Interstate Commerce Commission has called upon the railroads for a report on property abandoned prior to June 30, 1914. The report is to be filed with the Board not later than February 1, 1915, and is to be accompanied by a detailed statement of the claims of the roads in respect to such property abandoned. The order says:

"Such schedules shall show this property classified in accordance with the Interstate Commerce Commission's investment accounts and shall give the physical units of the property, with the original cost of same to date of abandonment; also date of abandonment and disposition and present status of abandoned property. Carriers shall accompany such schedules with a descriptive list of all maps, profiles or other records which refer to the property and which will serve to aid the Commission in identifying and examining the same, and upon request from the Commission shall file with it such maps, profiles and other records or copies of the same as may be required."

All the railroads having an annual gross revenue of $100,000 or more were this week directed by the Valuation Board to assemble for examination their physical valuation maps. The roads are permitted to submit any maps they may now have, instead of being obliged to prepare new ones, provided those now available meet with the requirements of the Commission's order of last February. The Commission has requested the roads to collect such maps at some convenient point for examination by one of its representatives. Ordinarily, it is stated, the Commission will give three months' notice to a carrier whose property it intends to value before the work is undertaken. The Commission has issued a circular in the matter, saying:

"As soon as the Commission has passed upon the maps and profiles the carrier should proceed to make the changes or additions required in present maps and profiles or to prepoare new ones, as the case may be. Carriers having no maps and profiles, or whose maps and profiles are clearly of such a character as to be insufficient for this work, should at once proceed to prepare those called for by the order of the Commission."

The notice of the Commission also contains the following:

"All carriers should at once prepare a list of their lands, showing grantor, grantee, instrument, &c., as called for in the order. If the carrier prefers, it may in the first instance prepare typewritten schedules which may be so arranged upon separate sheets as to be mechanically transferred to the maps finally. In the end the schedule of lands must appear upon the maps as set forth in the order pertaining to maps and profiles."

Conferring on Inter-Ocean Rates.

REPRESENTATIVES of the Santa Fe, Union Pacific, Southern Pacific, Missouri Pacific and Northern Pacific, held a conference with examiners of the Commission on July 7th, over the details of the decree of the Supreme Court in the so-called intermountain rate case. These railroad officials conferred with certain members of the Commission and they were directed to prepare a statement in consultation with the examiners for submitting to the Commission.

It is understood that the roads will attempt to conform to the decree of the Commission, affirmed by the Supreme Court, and make rates from the Eastern territory to the intermountain territory upon the proportions fixed by the Commission in the opinion issued over two years ago. Upon certain commodities, however, the roads believe they should be granted greater relief than permitted by the Commission in the old order and it is upon this point that the conferences are being held.

Decrease in Pig Iron Rates from Birmingham District Ordered.

IN a decision made public on July 7th, the Commission held to be unreasonable, freight rates on pig iron from the Birmingham, Ala., districts to Louisville, St. Louis, Chicago and to Boston by rail and water. Rates representing in some instances as much as a ten per cent reduction, were prescribed to become effective August 15th, over the Louisville and Nashville and other roads.

The Commission likewise held to be unreasonable existing rates from Birmingham to interior New England points and prescribed new rates. It was also directed that the proportion rates to and from Ohio River should be so revised as to make the through rate from Chicago not in excess of $4.00 per gross ton. The case has been pending before the Commission for more than a year.

STATE COMMISSIONS.

Louisiana.—The recent decision of the United States Supreme Court in what was known as the Shreveport case is already having its effect upon the State Commissions in their rate regulation activities.

In a case decided on June 30th by the Railroad Commission of Louisiana in which the Lafayette Chamber of Commerce petitions the Commission to reduce certain rates on cement on the Morgan's Louisiana and Texas Railroad and Steamship Company, the Commission holds that the purpose of the complaint is not to have established a reasonable rate for the transportation of cement between points in the State of Louisiana, but to have the Commission establish a low rate with the declared purpose of using this rate only on shipments from interstate points. The complainant's remedy is to file his complaint with the Interstate Commerce Commission and ask that a reasonable interstate rate be established. It is not the duty, nor is it within the power of this Commission, to establish a rate between two points for the sole and only purpose of lowering an interstate rate.

Missouri.—The Public Service Commission has issued an order which will oblige the owners of a thirty-mile railroad in the southwestern part of the State to open the line to the public as a common carrier. The railroad is the Sligo & Eastern and is owned, it is understood, by a subsidiary of the American Car & Foundry Co. It extends through a district about fifteen miles wide in Dent, Crawford, Iron, Washington and Reynolds counties, and furnishes the only outlet to the timber cut in that district. As part of the railroad has been operated as a private carrier, it is claimed, shippers were prevented from sending their timber to the general market, but were forced to sell a subsidiary of the American Car & Foundry Co., which thereby was enabled to dictate its own price. The Commission ordered the railroad to operate trains over the entire thirty miles, including the eleven miles built as a private line, as a common carrier, and to file a schedule of tariffs with the Missouri Public Service Commission.

New Jersey.—The Railroad Commission has issued an order, effective July 6th, requiring the New York, Susquehanna & Western and the Erie Railroads to "clean and maintain in reasonably clean condition the outside of each passenger car, including windows." Formal complaint, on which the commissioners based their order, was brought by H. P. Dilliston, of Ogdensburg, who set forth, that, on a number of trips, he and other passengers found the windows of the cars were very dirty. The board declared that the defendant roads had produced no evidence of financial condition which would prevent compliance with the order.

Ohio.—The Public Utilities Commission held a hearing at Columbus, June 0th, on the application of the New York Central & Hudson River and the Lake Shore & Michigan Southern railway companies to combine, and at its conclusion dismissed the application on the ground that the Commission had not jurisdiction to investigate whether the merger would effect monopolization of lines running through Ohio from Buffalo to Chicago. The proposed merger involves an issue of securities aggregating $300,000,000. In announcing the decision, Oliver H. Hughes, chairman of the utilities commission, explained that the Ohio law does not confer authority on the Commission to determine when competition is eliminated by combination of railroads, though it gives this power in cases of other utilities. Similar petitions have been filed with Public Service Commissions of New York, Pennsylvania, Michigan and Illinois. Albert H. Harris, vice-president of the New York Central, and F. J. Jerome, of Cleveland, general counsel for the Lake Shore, declared after the decision was announced that it will not affect materially the status of proposed merger action. They will press their application in other states.

LEGISLATION.

Louis D. Brandeis Proposes Amendment to Railroad Security Bill.—Louis D. Brandeis, special council for the Interstate Commerce Commission, who has been studying the railroad securities bill now before the Senate Committee, has submitted an amendment providing for government supervision, which the committee will take up for consideration. It is understood that the proposed amendment has been approved by Judge Lovett and other prominent railroad men.

The amendment provides that after January 1, 1915, it shall be unlawful for any railroad company subject to the interstate commerce act, even though permitted by the authority creating such company, to acquire any interest whatsoever, directly or indirectly, by stock ownership or otherwise, in any property, or to issue any capital stock or any bond or other evidence of interest or indebtedness of such railroad company or to incur or assume any obligation as guarantor or surety for the security of any other company, or to spend the proceeds of any security or any part of its surplus for any purpose other than:

a. The construction, improvement of equipment, operation or extension of, or provision or betterment of facilities for its railroad or some railroad, boat line or trolley line, comprised or to be comprised in the transportation system of which it forms a part, and which it may lawfully own or operate.

b. The discharge or refunding of any securities or indebtedness lawfully issued or incurred by the company or by other companies comprised in its transportation system.

c. The reimbursement of the treasury of the company for expenditures for any of the purposes in this act specified.

d. The acquisition of any railroad, boat line or trolley line, of any stock, or other interest in any such railroad, boat line or trolley line, the acquisition of which shall be authorized by the Interstate Commerce Commission.

e. Some other purpose for which the Commission may on application and hearing find to be a proper railroad or transportation purpose, and as to which the Commission shall likewise find that the expenditures therefore will not impare the capacity of the carrier to perform its duty.

The amendment also proposes that it shall be unlawful for any railroad company subject to the interstate commerce act to acquire or lease any interest in any railroad, boat line or trolley line, or any stock or other security of any corporation, owning or controlling the same, unless the Commission upon application and hearing shall have authority such acquisition on a finding that the acquisition will not impair the ability of either such carriers to perform its services to the public.

The Cost of Legislation to the Pennsylvania Railroad.—Then Pennsylvania Railroad has compiled elaborate statistics which disclose what it has cost that company to comply with the recent legislation, both state and federal, regulating the operation of railroads. Three classes of laws alone have added an average of $2,775,000 a year to the operating expenses of the Pennsylvania System, including both eastern and western lines. All of this money is being spent in directions assumed by the lawmakers to be of advantage to the traveling public, or to the employes of the system, but which add nothing at all to its yearly revenues. The laws of the three classes, with the yearly cost of complying with each class, follow:

Hours of service laws	$1,080,000
Boiler inspection laws	515,000
Full or "extra" crew laws	1,180,000

In addition, when the Pennsylvania System has placed on all its equipment the safety appliances required by law, a sum estimated at $5,185,000 will have been expended for this purpose. To date the system has spent $603,000 in complying with the law regulating the character of ash pans on locomotives, and the work of replacing the old ash pans is not yet finished.

Paying off employes semi-monthly, instead of monthly, involves an additional expense for the work of clerks, paymasters, etc., of $400,000 a year in round figures, which is not included in the first mentioned total of $2,775,000. Another cause of added expense of which few outsiders probably would ever think is found in the "Jim Crow" laws. Compliance with these statutes in the portions of "Jim Crow" territory through which the Pennsylvania lines run costs the system about $43,000 a year, a small sum compared with other items of legislative expense, but typical of a numerous class of small expenses, which, in the aggregate, run into a good deal of money. The total cost to the Pennsylvania System of obeying the "Jim Crow" laws from their first appearance on the statute books to June 30, was $300,700.

Expenses directly incurred by the Pennsylvania lines in obeying specific orders of various State Commissions up to June 30, 1913, were as follows:

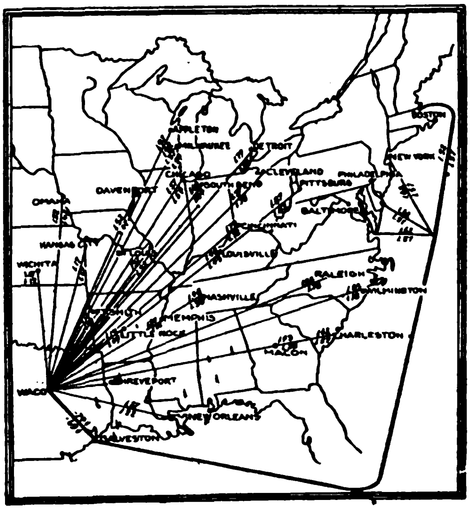
New York	$233,314
New Jersey	196,606
Pennsylvania	65,704
Maryland	6,485

If the letter of all the laws regarding grade crossings removal were to be enforced the cost to the Pennsylvania lines would be $63,850,000, the statistics show. By far the greater portion of this sum would be spent in New Jersey, which enacted a most drastic grade crossing law, placing the full burden of the cost on the railroads. As a matter of fact, railroad men say, the New Jersey law is not being enforced to the letter because of its obvious impracticability from a financial point of view.

LEGAL.

The Influence of the Shreveport Rate Case Decision.—The following map which appeared in the "Annalist" of April 28, 1913, is of interest at the present time on account of the recent decision of the Supreme Court in the Shreveport case which was discussed in the June issue of the "Railway World." This map indicates how delicately the rate situation throughout the country is adjusted and how any change in a local rate necessarily throws out rates on lines for hundreds and even thousands of miles. The map shows the effect of a reduction of five cents in a local rate between Waco and Galveston in Texas. This reduction forced changes in rates on the radiating lines clear to the Atlantic Coast and to the Great Lakes and on the water routes around to Boston.

Ramifications of a State Railroad Rate



In the recent Shreveport decision, the Supreme Court holds that Congress through the Interstate Commerce Commission, has the power to control interstate rates over an interstate carrier to the extent necessary to prevent injurious discriminations against interstate traffic; that is to say, that the State's power over even local rates cannot be permitted to interfere even indirectly with the regulation of interstate rates. How such power does interfere is graphically portrayed by the accompanying map and indicates that eventually State Commissions will largely cease to have authority over rate construction even of a purely local character.

Louisville and Nashville File Case Taken to Supreme Court.—United States Attorney-General McReynolds has filed with the United States Supreme Court an appeal from the Federal District Court in Kentucky, denying the application of the Government for an order compelling the Louisville and Nashville Railroad to permit examiners of the Interstate Commerce Commission access to its files of correspondence.

The Attorney-General makes the contention that a railroad can have no secrets from the Government. The case will be watched with great interest by railroad officials.

Supreme Court Sustains Commission in Intermountain Rate Case.—The United States Supreme Court has handed down its decision in the intermountain rate case and reversed the decree of the Commerce Court which held that the Commission had exceeded its power in ordering its own system of rates and the Congress could not delegate such powers to the Commission. As the justice of the zone percentages prescribed by the Interstate Commerce Commission were not attacked, the only question at issue was that of power and this was sustained by the Supreme Court's decision.

Rates from the east to Pacific Coast cities had for years been fixed by water competition. Rates to intermountain or interior Pacific slope points were made by adding to the through coast rates, the return rates to the interior points. That is the rates from the east were blanket rates, being the same from all eastern points; and were on the theory of competing with water and rail rates from the east. Spokane, for instance, paid the water rate from the Atlantic seaboard to, say, Seattle, and the rail rate from Seattle to Spokane. The railways under the long and short haul clause of the laws were permitted to allow the coast cities the competitive value of their location, and still pocket their revenue from the east to points between the Rocky and the Sierra mountains. The act of June 18th, 1910, gave power to regulate long and short haul rates as affected by water competition, into the hands of the Commission. The railways had held that they could make competitive rates to the coast points, and that their rates to the interior intermediate points could only be attacked as to their reasonableness, independent of what the through rate might be.

The Commission after long investigation with a view to equalizing conditions between manufacturers in the east and making lower rates for the intermountain cities, made an order establishing a zone system of percentages. From points west of the meridian of St. Paul, intermountain rates could not exceed coast rates; between the meridian of St. Paul and that of Chicago, intermountain rates could be seven per cent greater than coast rates; between Chicago and Pittsburgh, fifteen per cent, and east of Pittsburgh, 25 per cent. This order amounted to a considerable reduction from the revenue from existing rates, and the railways applied to the Commerce Court which sustained their contention as above. The Supreme Court upholds the power of the Commission as delegated to it by Congress; and incidentally not only establishes its power to establish zone systems but to act on rates en bloc in a given territory, as it is asked to do in granting a five per cent increase in the official classification territory. The contention of lawyers opposing that increase that rates could only be passed upon individually, one at a time, and after thorough investigation of each case (an impossibility) is thus finally disposed of.

Interesting Recent Decisions.

IN this issue the "Railway World" begins a new department in which an effort will be made to record each month a careful analysis of the different court decisions pertaining to the operation, management and regulation of railways. The necessary reference to court records and authorities will be given in each case and if any further information is desired concerning such cases, it will be gladly furnished upon request.

Giving and Receiving Rebates.— (Federal Court). The United States Circuit Court of Appeals during the present term has disposed of two important railway rebate cases; United States v. Grand Rapids and Indiana Railway Company and United States v. Nickols & Cox Lumber Company. The former case was a prosecution under the Elkins Law of February 19, 1903, which forbids a carrier in interstate commerce to employ any rebate, concession or discrimination or device whatever respecting the transportation of property at a lower rate than that named in the tariffs published and filed by the company. The alleged rebates grew out of abuse of transit privileges accorded to shippers of lumber. In the last named case the Cox Lumber Company was prosecuted for having accepted rebates from the Grand Rapids and Indiana Railway Company. The evidence at both trials tended to prove that a number of cars of lumber had been shipped from Grand Rapids and an equal number shipped into Grand Rapids. Neither shipment had any relation to the other and was therefore not entitled to certain transit rates which were prescribed in certain instances where outgoing and incoming shipments were part of the same transaction. Each shipment was entitled only to the local rate. The Circuit Court of Appeals in reviewing the holding of the District Court decided that both companies were guilty as charged in the indictments of giving and accepting rebates. (Grand Rapids & Indiana Ry. Co. v. United States; Nickols & Cox Lumber Co. v. United States, 212 F. 577-588.)

Reasonable Passenger Fares.—(U. S. D. C.) In 1907 the Railroad Commission of South Dakota promulgated an order declaring a maximum passenger rate of 2½ cents per mile over certain railway lines within the State, including the lines of the Chicago and North Western Railway. Several of the companies affected filed bills in equity to restrain the Commission from enforcing the order, the ground being that the same was confiscatory and denied to the railroad companies affected the equal protection of the laws. The District Court, division of South Dakota, before whom the proceedings were had, held after making a thorough investigation of the earnings, expenses, value of property, etc., that a rate of 2½ cents per mile was reasonable, though a rate of two cents would be confiscatory. (Chicago & North Western Ry. Co. v. Smith, et al; Smith v. Chicago and North Western Ry. Co., et al, 210 Fed. 632.)

When Engaged in Interstate Commerce.—(Missouri). An interurban electric railway running through more than one State, carrying passengers or freight, is engaged in interstate commerce, and is a railroad within the federal Employers' Liability Act (Act, 1908, 35 Stat. 65), and while it is doubtful whether a street railway is a railroad within that act, an electric interurban railway which transfers its cars, with passengers therein, from its tracks to the tracks of a street railway, and transports them over such track in another State, dividing the fare collected for that part of the transportation covering the street railway tracks, is a railroad within the act, the use of the street railway tracks being no more than the use of a terminal facility. (McAdow v. Kansas City Western Ry. Co., 164 S. W. 188.)

Payment of Cash Fare on Train.—(N. C.) In view of Statutes 1908, allowing a railroad to impose an extra charge for a passenger's failure to procure a ticket, and to expel a passenger who wrongfully refuses to pay such extra charge, the parent or custodian of an infant who is responsible for its fare on failure or refusal to pay it together with the extra charge may be ejected. (Lankford v. Southern Ry. Co., 81 S. E. 998.)

Demurrage Charges.—(W. Va.) In the absence of special contract, a shipper of coal in carload lots to a consignee who declines to receive it is liable for demurrage accruing after notice of such refusal. (Baltimore & Ohio Ry. Co. v. Luella Coal & Coke Co., 81 S. E. 1044.)

Regulation by Commission.—(Nebraska.) By the constitutional amendment of 1906, and the statute pursuant thereto, the power and duty of the State Railway Commission "shall include the regulation of rates, service and general control of common carriers."—Const. Art. 5, Sec. 19a.

When a Company has obtained a franchise from the city to construct and operate its railways on certain streets of the city, and has constructed its tracks and is operating its cars thereon pursuant to such franchise right, it will be enjoined from removing such lines or withdrawing its cars from such service without first obtaining authority from the State Railway Commission so to do. (H. Herpolsheimer Co. et. al., v. Lincoln Traction Co., 147 N. W. 206.)

Review of Orders of Railroad Commission.—(Wisconsin.) An order of the Railroad Commission for the refund of excessive freight charges is reviewable on appeal from a judgment of the circuit court affirming it. (Minneapolis, St. P. & S. S. M. Ry. Co., et. al., v. Commission, 147 N. W. 366.)

The Regulation of Waiting Rooms.— (Kentucky.) Ky. St. section 784, requiring railroad companies to keep their waiting rooms open for passengers and comfortably warm for thirty minutes preceding schedule time of departure of all passenger trains, and until the train departs, does not require railroads to keep waiting rooms open for passengers at flag stations during the night-time, but does require it to keep its room open at a passenger station for a train that stops regularly at such station. (Chesapeake & O. Ry. Co. v. Lauhorn, 167 S. W. 132.)

Crossing Accident.—(Missouri.) A traveler about to cross railroad tracks is bound to stop, look and listen only when he can neither see nor hear, and where, from a point forty feet from the crossing, he saw that there was no train within between seven hundred and nine hundred feet, he is not bound to stop before proceeding on the tracks. (Lagrace v. Missouri Pac. Ry. Co., 166 S. W. 1063.)

Removal of Snow and Ice from Platforms.—(Michigan.) In the absence of unusual conditions, those operating trains are not bound to free the platforms from snow and ice until the storm has abated and a reasonable opportunity is had to remove the ice and snow at places where such work is done, and hence a passenger, who slipped on ice and snow on the platform of a train which was free from snow when it left a main station, cannot recover where snow was drifting up to a short time before the accident and many accumulations were from the feet of other passengers. (Meyers v. Michigan Central Ry. Co., 147 N. W. 485.)

Termination of Liability.—(Oklahoma.) If a common carrier accepts freight for a place beyond his usual route, he must, unless he stipulates otherwise, deliver it at the end of his route in that direction to some other competent carrier, carrying to the place of address, or connected with those who thus carry, and his liability ceases upon making such delivery. (St. Louis & S. F. Ry. Co. v. Close, 140 Pac. 1176.)

Negligence of Inspector.—(Maine.) Where decedent, a railroad car inspector, started to inspect a string of cars on a siding and placed himself in a dangerous position over the rail without displaying a blue signal, as required by rule, in order to protect the cars, and, as he was so engaged, the cars were moved in switching, and he was instantly killed, he was guilty of contributory negligence precluding recovery for his death. (Gates v. Maine Cent. R. Co., 90 A. 703.)

Obstruction of Water Courses.—(New York.) Where a railroad under authority of law builds a bridge, it is not liable for an obstruction even of the bed of the stream, unless by due care obstruction could have been avoided, but it is bound to minimize the interference with the flow of water so far as it reasonably can; this duty being confirmed by Railroad Laws, 1913, c. 284, section 17. (Howard, et. al., v. City of Buffalo, et. al., 105 N. E. 426.)

Transportation of Goods.—(N. Y. C.) The Carmack Amendment to the Hepburn Act (Act, June 29, 1906, c. 3591, U. S. Comp. St. 1911), providing that any carrier receiving property for transportation "from a point in the State to a point in another State" shall be liable for loss or damage caused by it or any connecting carrier, and that no contract, receipt, etc., shall exempt it from such liability, does not apply to transportation from a point in one State through another State to an adjoining foreign country. (Burke v. Gulf, C. & S. F. Ry. Co., 147 N. Y. 794.)

Connecting Carriers.—(Maine.) Under the Carmack Amendment of June 29, 1906 (Act, June 29, 1906, c. 3591, U. S. Comp. St. 1909), to the Interstate Commerce Act, declaring in substance that the receiving carrier has the obligation of through transportation with a carrier's liability throughout, a receiving carrier issuing bills of lading only over its own line was not liable for nonperformance of a special agreement to heat the cars made by a connecting carrier, but such connecting carrier was, as to defaults in the heating during transportation, to be deemed the initial carrier. (Ross, et. al., v. Maine Cent. R. Co., 90 A. 710.)

Elevation of Grade Crossings.—(Illinois.) In the exercise of its police power, a city may, subject to constitutional limitations, require a railroad company to elevate its tracks so as to avoid grade crossings. (Otis Elevator Co. v. City of Chicago, 105 N. E. 339.)

Crossing Accident Caused by Negligence.—(Penn.) Where plaintiff, when within ninety feet of a two-track railroad crossing, stepped to the pole of the hay wagon which he was driving and looked both ways from a point where he had an uninterrupted view toward the train of three-fourths of a mile, and, after resuming his seat, where the hay limited his view to a few feet of the track immediately in front of him and interfered with his hearing, approached the track at an acute angle, so that his back was toward the train, and, without further precaution, drove at a slow walk onto the tracks, where the hind wheel of his wagon was struck by the engine of a passenger train on the second track, he was guilty of contributory negligence barring his right to recover for the resulting injuries. (Higbee v. Atlantic City R. Co., 90 A. 635.)

ORGANIZATION NOTES.

Organization of Foreign Trade Council.—For the purpose of co-ordinating the foreign trade activities of the nation in an aggressive and systematic extension of American over-sea commerce, Mr. Alba B. Johnson, President of the National Foreign Trade Convention, held at Washington, May 27th and 28th, has announced the personnel of the Foreign Trade Council, created by resolution of the several hundred delegates from all parts of the United States who attended that conference. Mr. James A. Farrell, President of the United States Steel Corporation, is named as the chairman, and all sections of the country, and practically all branches of industry, commerce, transportation and finance are represented among the members.

Sixth World's Aeronautical Congress.—One of the most important corollaries of the Aerial Race Around the World organized by the Panama-Pacific International Exposition will be the bringing together at the exposition of the Sixth World's Aeronautical Congress. Such men as Ch. Maurain, Le Directeur Institut Aerotechnique de I, Universite de Paris; R. T. Glazebrook, C.B., M.A., D.E., F.R.S., Director National Physical Laboratory, Teddington, England; Chairman British Government Advisory Committee on Aeronautics; Baron Deutsche de la Meurthe, President Aero Club of France; Dr. L. Prandtl, University of Cittengen; are among the delegates to the congress who will come from all over the world to discuss the advances made in the science of aerial navigation and to consider from a scientific standpoint the results of the World Flight.

The congress, the sixth one of its kind that has ever been held, will be the first that has been brought together since the real development of practical aviation. The first was assembled at Paris in 1899 on the initiative of Jannsen, the French astronomer and each of the succeeding congresses have been held coincidental with universal expositions. Eleven years passed before the second congress was held in 1900 and six more before the third at Milan. The fourth met at Nancy three years later and the fifth at Turin in 1911.

No such opportunity for the gathering of important data concerning the navigation of the air has ever been afforded to compare with the observations made by the pilots of the various types of aircraft while they are circling the globe. These reports will be presented to the congress for discussion and comment, and will be purely of scientific interest.

The sporting side of the world race will be under the supervision of the Aero Club of America which is affiliated with the Federation Aeronautique International, the International body having sporting jurisdiction over all aviation sporting events throughout the world. The Aeronautical Society in the United States, allied with the Aeronautical Society of Great Britain, which inaugurated the movement for the congress is the second oldest aeronautical organization in the world and the oldest of the kind in the United States.

The organizing committee of the congress is composed of Hudson Maxim, Inglis M. Uppercu, Thomas A. Hill, Alfred W. Lawson and Ernest L. Jones. Among the prominent delegates from the United States are Prof. David L. Gallup, M.E., Worcester, Polytechnic Institute; William J. Hammer, Clifford B. LePage, M.E., Asst. Professor of Physics, Stevens Institute; T. R. MacMechen, expert technical observer of dirigibles; N. B. Sellers, John E. Sloane, head of the Sloane Aeroplane Company and Captain Chambers, head of the aviation department of the United States Navy.

Dallas, Texas, is the first city officially to enter an aeroplane in the around-the-world aviation race. Captain J. H. Worden, aviator now with the Mexican federal army is to be the pilot and the machine is called "The Dallas." The city has agreed to build the machine and will back his flight with $250,000. He is the first aviator to participate with his machine in actual warfare in the western hemisphere.

Prime Minister Richard McBride of British Columbia has written the department of aeronautics recommending Prince Rupert, B. C., as a control station for the around-the-world aviation race. Arnold Kruckman, chief of the Bureau of Aeronautics has returned from his tour of the United States in the interests of the 1915 flight and has started on his trip around the world to establish foreign control stations.

One of the famous German dirigibles will be seen at the Panama-Pacific International Exposition. Baron von Brandenstein, representative of the Parseval Airship Company of Berlin, is in San Francisco and has just made the final arrangements. He states that the dirigible that will be brought to the Exposition will be 350 feet long, will have a speed of 45 miles an hour and the gondola will afford accommodation for 20 to 25 passengers. The hangar will be built near the aviation field.

Annual Meeting of Traffic Club of Louisville and Nashville Railroad.— The Louisville and Nashville Traffic Club held their Fourth Annual Outing at French Lick Springs on June 20th. One hundred and seventy-six members were present. The sports included a game of baseball, tennis, golf and bowling tournaments.

Meetings of the Board of Governors of the Pittsburgh Traffic Club.—The new Board of Governors of the Traffic Club of Pittsburgh met on June 22nd, in the Fort Pitt Hotel. The first action taken was the election of a chairman and Wm. A. Sproull, Traffic Manager, Cambria Steel Company was honored. President E. F. Lalk announced the following committees to serve for the ensuing year:

Bi-Monthly Entertainment Committee: R. B. Merrick, G. A., Frisco Lines, Chairman; C. E. Barnhart; T. M., Babcock Lumber Company; J. A. Fitzpatrick, G. A., T. St. L. & W. R. R.; F. A. Higerd, Asst. T. M., H. J. Heinz Company; J. G. Hill, Com. Agt., Q. & C. Route; J. C. Kimes, Com. Agent, B. & O. R. R.; John F. Lent, T. M., of various interests; T. B. Moss, G. A., T. & P., I. & G. N. Rys.; C. McNicholl, Asst. T. M., American Bridge Company; A. H. Orr, Agent, Atlantic Coast Despatch; W. H. Pfahl, Jr., T. M., Armstrong Cork Company; A. Waldbauer, G. A., Orient Ry.; E. R. Worcester, T. M., MacBeth Evans Glass Company.

Publicity Committee: G. A. Aiken, T. M., Spang Chalfant & Company, Inc., Chairman; J. F. Constans, G. A., C. P. & St. L. R. R. Co., Assistant Chairman.

Relations with other organizations, J. E. Corfield, G. A., Union Pacific R. R., Chairman.

American Association of Railroad Superintendents.— The committee on interchange car inspection of the American Association of Railroad Superintendents held a meeting in St. Louis on June 27th, there being in attendance the following railroad officials:

Chas. Burlingame, President of the Association, and Superintendent, The Wiggins Ferry Co., St. Louis, Mo.; M. Marea, General Superintendent, St. Louis Troy and Eastern Railroad, East St. Louis, Ill.; Newman Kline, Superintendent, Northern Pacific Ry. Co., Minneapolis, Minn.; J. E. Mechling, Master Mechanic, Vandalia Railroad, Terre Haute, Ind.; C. S. Shearman, General Foreman, Chicago Junction Ry. Co., Chicago, Ill.; J. J. O'Brien, Superintendent Car Department, Terminal Railroad Association of St. Louis, St. Louis, Mo.; A. S. Sternberg, Traveling Inspector, Car Department, Wabash Railroad, Springfield, Ill.; E. H. Harman, Secretary, The American Association of Railroad Superintendents, St. Louis; J. G. Fields, Assistant Secretary, The American Association of Railroad Superintendents, St. Louis.

The Committee formulated a number of recommendations to be submitted at the annual meeting of the American Association of Railroad Superintendents to be held in New York City, August 20 and 21, 1914.

Annual Meeting of Railway Supply Men's Association.—The Railway Supply Men's Association held its annual meeting at Atlantic City on June 13th. The report states that 82,424 square feet of exhibit space was taken as against 87,360 square feet last year.

Officers for 1914-1915 were unanimously elected as follows: President, J. Will Johnson; vice-president, Oscar F. Ostby.

Members of the Executive Committee: Third District, C. E. Postlethwaite and P. J. Mitchell. Fifth District, George H. Porter, Sixth District, Frank E. Beall.

Votes of thanks were given the retiring officers for their efficient service. Later the executive committee organized and the president appointed the following committees:

Exhibit: Joseph H. Kuhns, chairman; J. C. Whitridge, C. E. Postlethwaite.

Finance: F. M. Nellis, chairman; J. C. Currie, C. F. Elliott.

Badge: C. B. Yardley, Jr., chairman; Oscar F. Ostby, George H. Porter.

Hotel: Oscar F. Ostby, chairman; S. M. Dolan, Phillip J. Mitchell.

By-Laws: C. F. Elliott, chairman; F. E. Beall, George H. Porter.

Entertainment: George R. Carr, chairman.

Enrollment: Harold A. Brown, chairman.

Transportation: George T. Cook, chairman.

J. D. Conway was re-elected secretary-treasurer.

Convention of Association of Railway Electrical Engineers.—The Association of Railway Electrical Engineers held its mid-year convention at Atlantic City, N. J., June 12th, while the Master Car Builders' Association was in session. Reports were received from the various standing committees, covering the following subjects: Axle equipment, data and information, electric traction, head end equipment, illumination, outside construction and yard lighting, wire crossings, shop practice, axle belting, standards, rules for car wiring, wiring cables and yard facilities for chaging storage batteries. These reports were in general limited to progress. The Committee on axle belting, however, presented a report which included a final draft of specifications for belting for the purpose of driving axle generators as agreed upon by the committee. The committee on illumination presented a report covering a series of illumination tests in day coaches, made by the Association in the shops of the Lake Shore & Michigan Southern Railway, at Cleveland, Ohio. The committee on standards reported an outline of subjects recommended for discussion at the next annual meeting. A special committee on lamps reported action taken at a meeting held in Chicago, May 18th, at which a schedule was adopted of lamps divided into two general classes: first, lamps to be recommended for adoption as standard for train lighting service; second, lamps accepted for train lighting service, but the use of which is not recommended.

Annual Convention of Train Despatchers' Association.—The Train Despatchers' Association of America, held its 27th annual convention at Jacksonville, Fla., on June 16th. President J. P. Finan took the chair and appointed a credentials committee, which reported sixty-eight members present. Fourteen members have withdrawn during the past year and 55 applications for membership and reinstatement were approved. Later there were other applications, and in all 61 members were added. The report of the executive committee showed a total membership of 1,155. The total receipts during the year were $3,603, and total disbursements $3,814.

The principal business of the convention was the discussion of the report of the Train Rules Committee, the same that was discussed by the American Association of Railroad Superintendents last August, at Chicago, and printed in the superintendents' proceedings.

On Tuesday, the convention was addressed by W. L. Stanley, general claim agent of the Seaboard Air Line, on the subject: "Does the prosperity of the railroads interest me personally?" The address evoked great applause. On the same day, W. H. Potter, superintendent of telegraph of the Southern Railway, addressed the convention on the subject of telephone train despatching. On Thursday the convention completed its discussion of the Train Rules Committee report and elected C. A. O'Connor (Boston & Albany), Springfield, Mass., president; T. W. Fitzgerald (Southern Pacific), Sparks, Nevada, vice-president, and O. L. Taylor (Atlantic Coast Line), Sanford, Fla., member of the executive committee for four years. J. F. Mackie was re-elected secretary-treasurer and editor for the term of two years. Minneapolis, Minn., was selected as the place of meeting for 1915, and June 15th the day. A proposed constitutional amendment providing for the raising of a fund of $1,000 to be used for the relief of disabled members was defeated.

Summer Meeting of Transportation Car Accounting Officers.—The Association of Transportation Car Accounting officers held their summer meeting at Atlantic City, June 18th and 19th, with 116 members in attendance. Ivy L. Lee, executive assistant, Pennsylvania Railroad, addressed the members and referred to the present political unrest prevailing in the United States and other parts of the world, due to a demand by all classes of labor to a more general distribution of wealth. He pointed to the great problems to be solved in adjusting the various situation so as to produce equity in the various distributions for service performed and in this connection referred to the unfair and confiscatory legislation which is being continually directed against the railroads by the various legislatures, tending to increase the cost of operation and to decrease efficiency.

The Committee on Car Service expressed the opinion that a regulated pool of car equipment would offer substantial relief in the handling of cars as between railroads but it also recognized certain obstacles which will have to be overcome before such a pooling could be workable. Among these obstacles were:

(1) The manifest necessity that equipment be controlled by neutral parties, where now the responsibility for such control rests with the executive of each owning road.

(2) A large proportion of the equipment has been placed in service under car trust obligations that should be adequately conserved in any transfer of control.

(3) The variation in age, design, condition, capacity and dimensions of each class of equipment.

(4) Special equipment necessitated by variety of traffic peculiar to various sections of the country.

(5) The necessity for each carrier to provide its quota of equipment.

The committee suggested the following possible features of a pool as points for discussion:

(1) Carriers to form a holding company empowered to purchase or lease equipment.

(2) Ownership or car trust obligation to be indicated by plates attached to car.

(3) Pool to be started with so-called legal tender box cars.

(4) Special equipment to be handled strictly in accordance with Car Service Rules.

(5) A per diem charge to be determined upon which shall defray the recognized costs of car ownership, plus an amount that will cover all overhead and general expenses incident to pool operation.

(6) Operation of the pool to be divided into zones, under local management, the general manager reporting to the executive vommittee of the holding company.

(7) Pool storage and repair yards to be located at convenient points.

(8) Surplus and bad order cars to be delivered to nearest storage yard, per diem ceasing upon such delivery. All cars leaving storage yard to be in first class, serviceable condition.

(9) All repair and maintenance chargeable to owners to be assumed by holding company. Repairs due to unfair usage to be charged as at present.

(10) Movement of cars empty from storage yards to be paid for at tariff rates by the holding company.

These were thoroughly discussed and the subject returned to the committee for further consideration.

The list of accepted assignments of reporting marks for cars of private ownership, presented by the Committee on Office Methods and Accounting, was adopted for submission to the American Railway Association. Approximately 365 owners of private cars have accepted assignments.

The Association approved the action of the committee in recommending to the American Railway Association the elimination of the footnote reference to per diem rule 1. It is now understood that reporting roads shall have six months from the last day of the month in which the per diem is earned to report the same to car owner, failing in which the per diem rate shall be increased five cents per car per day.

The Association adopted for submission to the American Railway Association the form recommended by the committee for use by the holding road in reporting cars held under per diem rule 14. The amended form of "summary of per diem reports," presented by the committee, was adopted for submission to the American Railway Association with a slight amendment. It was also decided to recommend to the American Railway Association that per diem rule 11 be amended to provide that the use of A. R. A. prescribed form "G" shall be mandatory in reporting per diem to car owner.

The Committee on Conducting Freight Transportation reported that several roads which have taken advantage of the recommendations of the committee with reference to methods for reducing delays to cars in yards, have obtained very gratifying results; one road reporting a net saving in per diem alone of $2.494 in two weeks, in a single yard, and an increase in the average miles per car per day for the division of 48.1 per cent over the same month of the previous year.

The Committee on Conducting Passenger Transportation reporting a proposed cut of rules to govern the interchange of passenger cars which was referred to letter ballot. The Committee on Joint Interchange and Inspection Bureaus reported that interchange and inspection bureaus had been established at Chicago, Denver, Des Moines, Dallas, Peoria, Pueblo and Shreveport. The election of officers for the ensuing year resulted as follows:

President, J. M. O'Day (Illinois Central); first vice-president, J. T. King (Atlantic Coast Line); second vice-president, F. E. Higbee (Central of New Jersey); secretary, G. P. Conard and treasurer, F. M. Luce. The next meeting will be held at Richmond, Va., December 8th and 9th, 1914.

LABOR.

A Comparison Between British and American Railway Employes.— The Bureau of Railway News and Statistics of Chicago, has recently issued an interesting comparison between the number of employes engaged in operating railways in the United Kingdom and those engaged in a similar capacity in the United States. According to the Bureau's statement, there were 643,135 wage earners employed on the railways of the United Kingdom at the close of the year 1913, of which 594,088 were classed as adults and 49,047 as boys, i. e., under eighteen years of age.

These figures show an increase of 44,385 over the census report of 1910, but only 21,794 over the number reported in 1907. The British figures, which do not include the salaried staff, for the last seven censuses may be compared with those for the United States in the corresponding years also exclusive of general and other officers, as follows:

	Number of Railway Employes.	
	United Kingdom.	United States.
1913	643,135	1,714,603
1910	608,750	1,684,552
1907	621,341	1,672,074
1904	581,664	1,281,581
1901	575,834	1,061,466
1898	534,141	866,992
1895	465,112	777,093
Increase 18 years	178,023	937,570
Increase per cent ...	38.3	120.7

The contrast in these figures of increase emphasizes the difference in the demands for transportation on British and American railways. Where the number of employes per 100 miles of track in the United Kingdom has increased from 2,197 to 2,743 in eighteen years, or nearly 25 per cent on American roads they have increased from 437 per 100 miles to 743, or over 70 per cent.

The compensation of British railway employes between 1901 and 1912, for which figures are available, increased from £29,354,000 to £34,912,000, or nearly 19 per cent, where the wage earners increased less than 11 per cent. During the same period the compensation of American railway employes, exclusive of general and other officers, increased from $588,517,000 to $1,227,933,000, or 108.5 per cent, against an increase of only 61.5 per cent in numbers.

During the eighteen years covered by the above reports of persons employed, the compensation of American railway employes increased 187 per cent against the increase of only 120.7 per cent shown in the number employed. The average pay of British railway men in 1901 was approximately $255 a year against $271 in 1912; that of American railway employes in 1901 was $555 against $716 in 1912. These figures are exclusive of salaried officials in both cases.

TRAFFIC.

United States Express Company Dissolution.— With the close of business on June 30th, the United States Express Company discontinued handling express shipments on approximately 32,000 miles of railway. The territory previously served by this company has been taken over in the main by the Adams, American, Southern and Wells Fargo.

The Foreign Trade of Leading Nations.— Great Britain, the United States and Germany established new records in 1913 for foreign trade. Exports from the United States last year aggregated $2,484,311,176, an increase of 3.5 per cent over 1912, the previous high point, but imports dropped off 1.8 per cent from 1912, the record year, the total for 1913 being $1,792,183,645. England's exports in 1913 went up nearly 8 per cent over 1912, and its imports expanded 3.3 per cent, the respective totals being $3,845,170,000 for imports and $2,627,305,000 for exports. Germany's imports in 1913 decreased a fraction of one per cent, while its exports increased 12.5 per cent, the imports amounting to $2,566,800,000 and exports to $2,419,440,000.

Southern Railway Withdraws from Colonists' Rates.—No more low, one-way colonist rates from any point on its lines to the West and Northwest will be sold by Southern Railway Company. President Harrison announces that Southern Railway Company has permanently withdrawn from participation in such rates from points where they have been in effect by Southern Railway to meet similar rates offered by competing lines.

This announcement is in accordance with the policy of President Harrison to do everything possible to discourage the movement of people from the South. For a number of years Southern Railway has endeavored to discourage the offering of low colonist rates from the South and has only placed them on sale at points where it was felt necessary to meet competition. From this time on, however, no such rates will be offered by Southern Railway regardless of any action that may be taken by any other line. Southern Railway will continue to offer homeseekers' rates into the South and will do everything possible to encourage the coming of desirable settlers to the territory along its lines.

Packing Crated Eggs in Straw.—Experiments in handling eggs so as to avoid breakage in transit have been made by the Baltimore and Ohio Railroad in an effort to reduce the loss and damage claims to the minimum. For some time eggs handled at several of the larger freight terminals of the company have been packed in straw, both for carload and less carload shipments, and the results have proven highly satisfactory. Arrangements are being made, as a result of the experiments, to pack egg crates in straw.

Latest Immigration Statistics.— The United States Department of Labor publishes the following statistics of immigration:

Year ending June 30, 1913.

Month.	Immigrant aliens admitted.	Emigrant aliens departed	Net change in population from alien immigration and emigration movement.
July	78,101	24,673	+ 53,428
August	82,377	25,725	+ 56,652
September	105,611	23,728	+ 81,883
October	108,300	27,153	+ 81,147
November	94,739	41,444	+ 53,295
December	76.315	45,048	+ 31,267
January	46,441	29,730	+ 16,711
February	59,156	15,253	+ 43,903
March	96,958	15,044	+ 81,914
April	136,371	18,331	+118,040
May	137,262	19,131	+118,131
June	176,261	22,930	+153,331
Total	1,197,892	308,190	+889,702

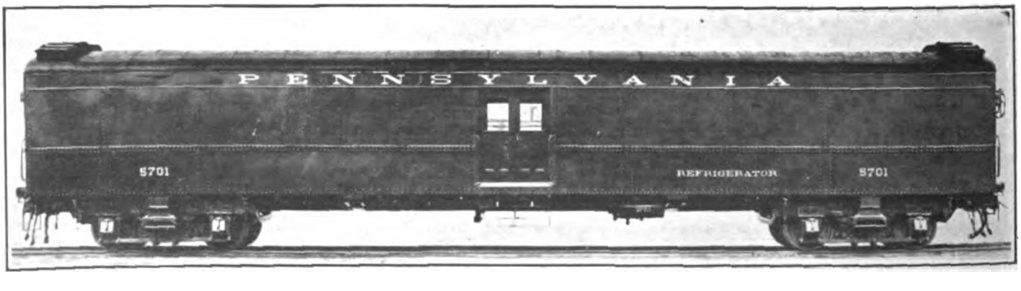
July, 1913, to May, 1914.

Month.	Immigrant aliens admitted.	Emigrant aliens departed	Net change in population from alien immigration and emigration movement.
July	138,244	26,434	+111,810
August	126,180	23,242	+102,938
September	136,247	19,241	+117,006
October	134,140	26,998	+107,142
November	104,671	27,632	+ 77,039
December	95,387	30,243	+ 65,144
January	44,708	34,216	+ 10,492
February	46,873	17,074	+ 29,799
March	96,621	13,500	+ 79,121
April	119,885	22,801	+ 97,084
May	107,796	23,544	+ 84,252
June	......	......	....
Total	1,146,752	264,925	+881,827

Milk Traffic on the Pennsylvania Railroad.— How important an item the milk traffic is to some railroads is well illustrated by the daily movement over the Pennsylvania Railroad which, into the cities of Philadelphia, Brooklyn, Baltimore and Jersey City, aggregates 265,000 quarts of milk and cream daily which, by the way, is an increase of 42,000 quarts a day over the record of a year ago.

Doubtless the principal reason for this increase in milk traffic over the Pennsylvania Lines is the effort being made by this Company to transport milk in such a manner that it reaches the consumer in the best possible condition. In order to conduct this branch of its service in the best possible manner, the Pennsylvania Railroad has recently spent $300,000 for thirty-six refrigerator cars of which the accompanying illustration is an example. These cars are all steel and are considered the most complete and practical ever constructed for handling milk shipments. The brine tanks, which are located in each end of the car, hold a sufficient mixture of salt and ice to maintain a temperature of about forty degrees during transit, which is considered ideal for the production of milk. This class of refrigeration also has the advantage of being absolutely dry which further serves to keep the milk in perfect condition. Each one of the new cars has a capacity of 12,000 quarts. Furthermore, the new refrigerator cars have enabled the Pennsylvania Railroad to greatly extend its service and now long hauls are being made from points in Northwestern New York and Pennsylvania to Philadelphia, New York and Brooklyn, with perfect satisfaction to the dealer and consumer. Owing to its tunnels under the Hudson and East Rivers, the Pennsylvania Railroad is the only line that has an all rail milk service to Brooklyn.

Commerce and Navigation of the United States for the Fiscal Year.—The annual report on the commerce and navigation of the United States in the fiscal year 1913, just published by the Bureau of Foreign and Domestic Commerce, Department of Commerce, reveals conditions of trade and industry in marked contrast with those prevailing in earlier years. In a total trade of 4,279 million dollars last year, exports exceeded imports by 653 millions, while at the middle of last century, as shown by earlier reports of the series, imports were largely in excess of exports. Then imports of manufactures were more than five times the exports thereof, while in 1913 exports of manufactures were more than six times the imports of like classes. Meanwhile manufactured articles have largely replaced farm products and raw materials (except cotton) as the leading articles contributing to the export trade. Only in the carrying trade has the United States lost ground in the last half century. In 1850, for example, 70 per cent of the foreign commerce was car-



One of a Number of Steel Milk Cars Employed by the Pennsylvania Railroad.

ried in American bottoms, while last year 80 per cent was carried in foreign bottoms.

Additional interest attaches to the 1913 report entitled "Commerce and Navigation of the United States" by reason of the fact that it contains the final statistical exhibit of the commerce handled at individual ports, many of which, under the reorganization effective July 1st last, lost their identity and are now included in rearranged customs districts bearing general titles such as "Massachusetts," "Michigan," and "St. Lawrence." The continued relative advance in importance of the Southern ports is strikingly brought out in the report. While New York still holds a pre-eminent position, having handled two billions of the 4¼ billion dollars' worth of merchandise making up our foreign trade, Galveston has rapidly gained and is easily the second port of the country in value of goods handled, with a total of 290 million. Other Southern ports and certain of those on the Canadian border and Pacific Coast are also growing rapidly in commercial importance. New Orleans is the third port, with a total of 252 million; Boston fourth, with 216 million; Philadelphia fifth, with 170 million; Baltimore sixth, 150 million; San Francisco seventh, 130 million; the Puget Sound ports eighth, 114 million; and Buffalo ninth, 81 million, closely followed by Detroit, 71 million dollars.

Car Shortage Predicted.—Western traffic officials appear to feel that a car shortgae of some extent is inevitable before the movement of the grain crops has been completed. If as the Government reports indicate, a record crop is to be expected, there can be no doubt that in some localities at least, cars cannot be promptly furnished to meet all requirements. The condition of the carriers for the past two or three years has been such as not to engage liberally in the purchase of rolling stock, and while at the present time there is a large supply of idle cars, this condition will be rapidly changed if the crop proves to be of the proportions officially reported. The fact that general merchandise is not moving as freely this year as in previous years may help to somewhat relieve the situation, although every indication now points to a shortage which is likely to be severe in certain sections.

What restrictions the Eastern roads may impose will be determined probably by what they can see in the way of a haul for them by letting an idle car go into Minnesota or the Dakotas or to St. Louis or Kansas City. But if the Northern lines put on an order stopping incoming grain cars at Minneapolis and Duluth and turning empties back rapidly for new grain loads, the Eastern lines probably will protest, unless they can see a flour or by-products haul for themselves from the Minneapolis mills, as the result of letting the Northern lines keep cars.

Probably it will work out at first by the "spotting" only of Eastern cars for Eastern loading by the flour mills, and the return to the grain fields of the system cars bringing grain to Minneapolis terminals. But if the combined wheat crop of the winter and spring wheat States is anywhere near the 900,000,000 bushels that now is indicated, the idle surplus of cars in the United States as a whole will dwindle rapidly and it will be a scramble of all roads to see who gets them.

Pass Regulations on the Philadelphia and Reading.—The Philadelphia and Reading Railroad Company has issued the following general notice with regard to the employment of passes over the Company's lines:

The attention of all holders of annual and term passes of the Company's issue is directed to paragraph No. 15 of the Regulations of the Interstate Commerce Commission governing the Issuing and Recording of Passes, effective January 1, 1912, which reads as follows:

Signatures of Users of Passes

15. All passes must bear the signatures of the users, preferably in ink. On the back of each pass must appear a statement that the holder is not prohibited by law from receiving free transportation, and that the pass will be lawfully used. This statement may be shown among other conditions, if any, and must be subscribed to by the holder.

In order to comply with this regulation, holders of passes are requested to affix their signatures to the passes which they hold, in space provided on the back thereof.

Passes unsigned must not be honored by conductors, who shall, upon presentation, request the holders to sign. If the holders refuse to sign, conductors shall take up such passes.

May Imports and Exports.—Imports increased during May over May of last year and exports decreased in the corresponding periods, according to figures announced by the Bureau of Foreign and Domestic Commerce, Department of Commerce.

May imports aggregated $163,637,386, against $133,723,713 in May of last year, free merchandise representing $102,507,928, or 62.7 per cent of the month's total, against $69,006,928, or 51.6 per cent in May a year ago. Domestic exports in May totaled $157,406,572, a decrease of $33,649,228 as compared with May, 1913. Foreign exports totaled $4,243,631, against $3,551,622 in May, 1913. The above figures show a decrease in the May imports of $10,259,090 as compared with those for April. The May exports show a decrease from those for April of $1,560,731.

The excess of imports over exports in May was $1,987,183, as compared with an excess of imports over exports in April of $11,345,606, and the excess of exports over imports in the eleven months' period is $471,538,948.

Gold imports during the month totaled $1,972,411, compared with $4,561,260 in May, 1913, while gold exports were $16,835,902, against $12,467,492 in May last year.

EQUIPMENT.

Electric Block System on the Southern Railway.—An automatic electric block signal system has just been completed and placed in service by the Southern Railway Company on the main line between Seminary, Va., and Orange, Va., a distance of 80 miles, all double track, providing continuous automatic signal protection for trains from Orange into the Washington Terminal Station. This system is now in use on other portions of the line in Virginia and North Carolina, giving in all a total of 198 miles of double track so protected, while arrangements have been made for equipping 120 miles more.

Steel Car Equipment on the Pennsylvania Railroad.—On January 1, 1914—the latest date for which statistics are available—the Pennsylvania Railroad System, with 2,554 all-steel passenger cars in service and 379 others under construction, owned more than one-third of all the steel passenger equipment cars in use in the United States.

The above figures are exclusive of sleeping and parlor cars. The total number of all-steel passenger cars, other than Pullman cars, in service in the United States on January 1, 1914, was 7,377. To replace with steel all wooden passenger cars now in use in the United States will cost about $581,000,000.

There were 2,115 steel sleeping and parlor cars in service on all roads on January 1, 1914, and 750—more than one-third—of this number were in use on the lines of the Pennsylvania System. Every sleeping car normally in use on the Pennsylvania System is of all-steel construction.

The Pennsylvania Railroad announced in 1906 that all future additions to its passenger equipment—passenger coaches, postal cars, baggage cars, express cars, etc.—would be of all-steel construction, and on January 1, 1914, almost exactly one-half of its passenger equipment had been replaced with steel cars. The Pennsylvania had 6,100 passenger equipment cars in service on January 1, 1914.

Pennsylvania Railroad Awards Large Rail Contracts.—The Pennsylvania Railroad Company has awarded contracts for 100,000 tons of steel rail to cover the requirements of its system for 1914, for which bids were requested some ten days ago.

The orders are placed with the following companies:

U. S. Steel Corporation	44,000 tons
Pennsylvania Steel Co.	22,000 tons
Cambria Steel Co.	22,000 tons
Lackawanna Steel Co.	6,000 tons
Bethlehem Steel Co.	6,000 tons

All these rails will be of 100 pound section except 15,000 tons of 120 pound rail. The 120 pound section will be used on the Main Line.

CONSTRUCTION.

Double Tracking the Southern Railway.—Within five years the management of the Southern Railway expects to have a double track line the entire distance, 649 miles, from Washington to Atlanta. President Harrison has made arrangements for financing this great undertaking of immense importance to the entire South, and it is planned that the work shall go forward as rapidly as it is possible to carry it on without interfering with the heavy freight and passenger traffic which moves over this line.

The funds for this work will be provided by the sale of $20,000,000 of bonds of the Atlanta and Charlotte Air Line Railway Company, the issue of which has been authorized and approved by the Georgia Railroad Commission. Of these bonds $5,500,000 have already been sold and the proceeds will be used to refund an equal amount of Atlanta and Charlotte Air Line bonds now owned by the Southern Railway. This sum will be used by the Southern Railway in double-tracking those portions of its line between Washington and Charlotte which are still single track. When this has been completed attention will be turned to double-tracking that portion of the line between Charlotte and Atlanta which is still single track. This will involve a great deal of heavy work, especially in the mountains of North Georgia, and will call for the expenditure of between $13,000,000 and $14,000,000.

Construction Work on the Southern Railway.—Contracts for construction of nineteen miles of double track on the Washington Division between Amherst and Elma, Va., have just been let by Southern Railway. Contract for the eight miles Amherst to Tye River was awarded to C. W. Lane and Company of Atlanta and for the eleven miles between Tye River and Elma to H. J. Dunavant and Company, of Chattanooga. The lines to be constructed are through the Virginia Piedmont country and will involve some very heavy work. These are the first contracts let under the plan by which Southern Railway Company expects to complete its double track between Washington and Atlanta in the next five years.

Bridge Completed Over Fraser River on Grand Trunk Pacific.—Advice has been received at headquarters in Montreal that the Grand Trunk Pacific is now carrying passengers from Fort William to Prince George, B. C., over an all rail route, a distance of 1729 miles. As the steel bridge across the Fraser River at Prince George has now been completed, trains will run directly to and from Prince George Station and no ferry transfer is necessary.

From Prince Rupert, Eastward, passenger service is in operation to Priestley, 337 miles, and while steel is laid over the gap between Priestley and Prince George, work is going forward to bring the roadbed up to the highest standard before inaugurating through passenger service between Winnipeg and the Pacific Coast terminal of the line.

ELECTIONS AND APPOINTMENTS.

Executive.

Frank H. Alfred, chief executive officer for receivers, Pere Marquette Railroad. Headquarters, Detroit, Mich.

E. B. Boyd, chairman, Western Trunk Line Committee. Headquarters, Chicago, Ill.

A. A. Brown, president, Rio Grande Railway. Headquarters, Brownsville, Texas.

J. W. Everman, first vice-president and general manager, St. Louis Southwestern Railway of Texas. Headquarters, Tyler, Texas.

Charles Hamilton, vice-president, Nevada-California-Oregon Railway and the Sierra & Mohawk Railway. Headquarters, Reno, Nev.

Judson Harmon, receiver, Cincinnati, Hamilton and Dayton Railroad.

William A. Harriman, vice-president in charge of the purchasing department, Union Pacific Company. Headquarters, New York.

D. A. O'Brien, vice-president and general manager, Rio Grande Railway. Headquarters, Brownsville, Texas.

Dr. Henry S. Pritchett, director, Atchison, Topeka and Santa Fe Railway.

Rufus B. Smith, receiver, Cincinnati, Hamilton and Dayton Railroad.

Albert J. Stone, vice-president, Erie Railroad. Headquarters, New York.

George C. Taylor, president, American Express Company. Headquarters, New York.

Legal.

James F. Green, general attorney, Missouri Pacific and St. Louis, Iron Mountain and Southern. Headquarters, St. Louis, Mo.

W. Scott Hancock, assistant general attorney, Missouri Pacific-Iron Mountain Lines.

James E. Kelby, general attorney, San Pedro, Los Angeles and Salt Lake Railroad. Headquarters, Los Angeles, Cal.

Benjamin F. La Rue, assistant general solicitor, Lehigh Valley Railroad. Headquarters, New York.

Financial.

H. Vance, secretary and auditor, Rio Grande Railway. Headquarters, Brownsville, Texas.

George W. Wiley, treasurer, Lehigh Valley Railroad. Headquarters, Philadelphia.

Accounting.

Benjamin A. Brown, auditor and assistant secretary, Colorado, Kansas and Oklahoma Railroad. Headquarters, Scott City, Kansas.

P. J. O'Malley, auditor of merchandise receipts, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

A. L. Williams, car accountant, Macon, Dublin and Savannah. Headquarters, Macon, Ga.

Engineering and Mechanical.

F. C. Baluss, engineer of bridges and buildings, Duluth, Missabe & Northern Railway. Headquarters, Duluth, Minn.

J. A. Carleston, general foreman of shops, Texas and Pacific Railroad. Headquarters, Marshall, Texas.

C. W. Coburn, resident engineer, Canadian Pacific Railway. Headquarters, Brandon, Man.

F. B. Costello, acting supervisor, Northern Pacific Railroad. Headquarters, Spokane, Wash.

John J. Daley, roadmaster, Dunkirk, Allegheny Valley & Pittsburgh Railroad. Headquarters, Dunkirk, N. Y.

A. F. Dorley, principal assistant engineer, Missouri Pacific Railway. Headquarters, St. Louis, Mo.

W. H. Finley, chief engineer, Chicago and North Western Railway. Headquarters, Chicago, Ill.

David Gratton, master mechanic, Oregon Short Line. Headquarters, Pocatello, Idaho.

J. Hainen, general superintendent of motive power and equipment, Southern Railway Company. Headquarters, Washington, D. C.

R. H. Hallstead, assistant engineer, Missouri Pacific Company. Headquarters, Kansas City, Mo.

R. E. Hammond, acting road foreman, Northern Pacific Railway. Headquarters, Minneapolis, Minn.

George W. Hand, valuation engineer, Chicago and North Western Railroad. Headquarters, Chicago, Ill.

S. Hickson, roadmaster, second district, Oregon-Washington Railroad and Navigation Co. Headquarters, Colfax, Wash.

John Horan, acting master mechanic, Northern Pacific Ry. Headquarters, Minneapolis, Minn.

George H. Jedele, roadmaster, Alliance division, Lake Shore and Michigan Southern Ry. Headquarters, Alliance, Ohio.

K. K. Kuney, locating engineer, government railway surveys in Alaska.

J. A. Lahmer, assistant engineer, Missouri Pacific Company. Headquarters, St. Louis, Mo.

F. Neher, assistant engineer, maintenance of way department, Missouri Pacific Company. Headquarters, St. Louis, Mo.

Hans Olson, assistant roadmaster, Northern Pacific Railway. Headquarters, Staples, Minn.

Walter N. Polakov, supervisor of power plants, New York, New Haven and Hartford Railroad. Headquarters, New Haven, Conn.

J. E. Roberts, superintendent, car service, Delaware and Hudson Company. Headquarters, Albany, N. Y.

E. C. Sasser, superintendent of motive power, Northern and Eastern districts, Southern Railway Company. Headquarters, Washington, D. C.

J. C. Schepp, master mechanic, Texas and Pacific Railroad. Headquarters, Texarkana, Texas.

H. B. Shoemaker, engineer maintenance of way, Chicago, Indiana and Southern Railroad. Headquarters, Gibson, Ind.

A. E. Sorley, principal assistant engineer, Missouri Pacific Company. Headquarters, St. Louis, Mo.

C. G. Washbon, resident engineer, Canadian Pacific Railway. Headquarters, Souris, Man.

C. Whitfield, general road master, Denver and Rio Grande Railroad. Headquarters, Denver, Colo.

Operation.

James M. Barrett, superintendent, district No. 2, Canadian Pacific Railway, Eastern division. Headquarters, Windsor Station, Montreal, Que.

C. W. Bearden, chief despatcher, Chicago and Alton Railroad. Headquarters, Chicago, Ill.

E. H. Beckley, trainmaster, Macon, Dublin and Savannah. Headquarters, Macon, Ga.

F. W. Brandt, assistant trainmaster, Susquehanna division, Delaware and Hudson Company.

R. L. Brown, trainmaster, Third and Fourth districts, First division, Denver and Rio Grande Railroad. Headquarters, Walsenburg, Colo.

F. G. Bullock, trainmaster, Florida East Coast Ry. Headquarters, New Smyrna, Fla.

F. D. Campbell, trainmaster, Chicago, Milwaukee and St. Paul Ry. Headquarters, Mobridge, S. D.

J. B. Chandler, superintendent of car service, Texas and Pacific Railway. Headquarters, Dallas, Texas.

A. B. Copley, assistant general manager, Third district, Rock Island Lines. Headquarters, El Reno, Okla.

Ramsey M. Cox, general manager, Nevada-California-Oregon and the Sierra and Mohawk. Headquarters, Reno, Nev.

I. K. Dye, general manager, Coal and Coke Railway. Headquarters, Elkins, W. Va.

James Flynn, assistant superintendent, Denver and Rio Grande Railroad. Headquarters, Gunnison, Colo.

J. N. Haines, superintendent, Seneca division, Lehigh Valley Railroad. Headquarters, Sayre, Penna.

J. B. Heafer, superintendent of transportation, International and Great Northern Railway. Headquarters, Houston, Texas.

J. P. Houston, superintendent, Eastern division, Minneapolis and St. Paul Railroad. Headquarters, Oskaloosa, Iowa.

James R. Kearney, general superintendent of transportation, Baltimore and Ohio, the Baltimore and Ohio Southwestern and the Cincinnati, Hamilton and Dayton. Headquarters, Baltimore, Md.

Edmund Lehigh, general superintendent, of police, Baltimore and Ohio Railroad.

J. M. Losey, chief train despatcher, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Perry, Iowa.

R. J. McCarty, Jr., general superintendent, Greenwich and Johnsonville Railroad. Headquarters, Greenwich, New York.

W. R. McCullom, assistant superintendent of terminals, Chicago and Alton Railroad. Headquarters, Chicago, Ill.

J. A. McDougal, superintendent, Colorado division, Rock Island Lines. Headquarters, Colorado Springs, Colo.

J. A. MacGregor, acting superintendent, Alberta division, Canadian Pacific Railway. Headquarters, Calgary, Alta.

R. S. Marshall, superintendent, Virginia division, Seaboard Air Line. Headquarters, Richmond, Va.

C. W. Miller, superintendent of terminals, Chicago and Alton. Headquarters, Chicago, Ill.

J. W. Mulhern, superintendent, Northern division, Pere Marquette Railroad. Headquarters, St. Paul, Minn.

Mark H. Reasoner, assistant supervisor of stations, Minneapolis, St. Paul and Sault Ste. Marie Railroad. Headquarters, Minneapolis, Minn.

H. L. Reed, superintendent, Kansas division, Rock Island Lines. Headquarters, Herington, Kansas.

F. L. Richards, trainmaster, Chicago, Milwaukee and St. Paul Railway. Headquarters, Savanna, Ill.

J. E. Roberts, superintendent of car service, Delaware and Hudson Company. Headquarters, Albany, New York.

J. G. Sharp, trainmaster, Tampa and Gulf Coast Ry. Headquarters, Gary, Fla.

W. A. Sheahan, superintendent, Nebraska division, Rock Island Lines. Headquarters, Fairbury, Neb.

J. D. Stack, general superintendent, Norfolk Southern Railway. Headquarters, Norfolk, Va.

E. E. Sutton, assistant chief despatcher, Chicago and Alton Railroad. Headquarters, Chicago, Ill.

J. E. Taussig, general superintendent, Texas and Pacific Railway. Headquarters, Dallas, Texas.

C. P. Torrey, superintendent of transportation, Hocking Valley Railway. Headquarters, Columbus, Ohio.

A. O. Veitch, chief train despatcher, Chicago, Milwaukee and St. Paul Railroad Company. Headquarters, Miles City, Mont.

O. H. Wadleigh, trainmaster, Nevada-California-Oregon Railroad. Headquarters, Reno, Nev.

A. E. Walker, superintendent, Arkansas division, Rock Island Lines. Headquarters, Little Rock, Ark.

W. A. Whitney, general superintendent, Oregon Short Line. Headquarters, Pocatello, Idaho.

F. M. Woodall, superintendent, Birmingham division, Atlanta, Birmingham and Atlantic Railroad. Headquarters, Manchester, Ga.

T. J. Worthman, superintendent, Iowa division, American Express Company. Headquarters, Omaha, Neb.

Traffic.

F. G. Abbey, assistant general freight agent, Missouri, Kansas and Texas Railroad. Headquarters, Dallas, Texas.

Brent Arnold, Jr., general agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Cincinnati, Ohio.

C. B. Austin, general agent, freight department, Western Maryland Railroad. Headquarters, Cleveland, Ohio.

E. R. Bardgett, commercial agent, Lehigh Valley Railroad. Headquarters, Cleveland, Ohio.

George E. Bates, industrial agent, Delaware and Hudson Company. Headquarters, Albany, New York.

Max V. Beckstedt, freight solicitor, Delaware and Hudson Company. Headquarters, Albany, New York.

A. J. Blaisdell, general agent, passenger department, Canadian Pacific Railway. Headquarters, St. Louis, Mo.

J. M. Breen, general agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Pittsburgh, Pa.

Streeter C. Cauble, assistant city ticket agent, Southern Railway. Headquarters, Charlotte, N. C.

A. S. Collins, general dairy agent, Rock Island Lines. Headquarters, Cedar Rapids, Iowa.

J. A. Cooley, immigration agent, South Dakota Central. Headquarters, Sioux Falls, S. D.

John J. Coyle, division freight and passenger agent, Delaware and Hudson Company. Headquarters, Scranton, Pa.

A. M. Crawford, city passenger and ticket agent, Southern Railway. Headquarters, Memphis, Tenn.

Walter J. Dill, soliciting freight agent, Tennessee Central Railroad. Headquarters, Chicago, Ill.

Charles K. Duncan, traveling freight agent, Tennessee Central Railroad. Headquarters, Chicago, Ill.

M. J. Fahey, commercial agent, Cleveland, Cincinnati, Chicago and St. Louis. Headquarters, Memphis, Tenn.

B. S. Fay, commercial agent, Winston-Salem Southbound Railway. Headquarters, Jacksonville, Fla.

M. C. Finkle, traveling freight agent, Carolina Despatch. Headquarters, Cincinnati, Ohio.

R. D. Fitzmaurice, superintendent, Providence division, New York, New Haven and Hartford R. R. Headquarters, Providence, R. I.

J. H. Ginet, Jr., western immigration agent, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Seattle, Wash.

W. F. Greaves, general southern freight agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Birmingham, Ala.

Frederick N. Hait, commercial agent, Lehigh Valley Railroad. Headquarters, Pittsburgh, Pa.

H. H. Hamill, commercial agent, Grand Trunk Railway. Headquarters, Detroit, Mich.

Arthur B. Hoff, industrial commissioner, Erie Railroad. Headquarters, New York.

H. L. Hudson, district freight and passenger agent, Oregon-Washington Railroad and Navigation Company. Headquarters, Lewiston, Idaho.

T. J. Keen, commercial agent, Texas and Pacific Railroad. Headquarters, Texarkana, Texas.

C. H. King, traveling freight agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Louisville, Ky.

J. O. Jones, traveling passenger agent, Southern Railway Company. Headquarters, Charlotte, N. C.

S. G. Langston, division passenger agent, Missouri, Kansas and Texas Railway. Headquarters, St. Louis Mo.

T. H. Lawrence, assistant general passenger agent, St. Louis Southwestern Railroad. Headquarters, Tyler, Texas.

C. L. Lyons, assistant general freight agent, Missouri, Kansas and Texas Railroad. Headquarters, St. Louis, Mo.

P. L. McGue, commercial agent, Rock Island Lines. Headquarters, Buffalo, New York.

C. L. Macmanus, demurrage supervisor for Texas, American Railway Association. Headquarters, Dallas, Texas.

B. S. Merritt, general agent, Great Northern Railway. Headquarters, Great Falls, Mont.

A. F. Meyers, commercial agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Nashville, Tenn.

K. A. More, commercial agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Nashville, Tenn.

L. W. Mosher, commercial agent, Missouri, Kansas and Texas Lines. Headquarters, St. Louis, Mo.

Walter Nichols, chief of traffic bureau, Cleveland, Cincinnati, Chicago and St. Louis. Headquarters, Cincinnati, Ohio.

J. H. Owings, city ticket agent, Southern Railway. Headquarters, Charlotte, N. C.

E. D. Perkins, assistant traffic manager, Pacific and Idaho Northern Railroad. Headquarters, New Meadows, Idaho.

C. W. Pinney, assistant general freight and passenger agent, Coal and Coke Railway. Headquarters, Elkins, W. Va.

E. J. Pope, commercial agent, Missouri, Kansas and Texas Railway. Headquarters, Wichita Falls, Texas.

B. W. Robbins, assistant general freight agent, Denver and Rio Grande Railroad. Headquarters, Denver, Colo.

C. E. Rolfe, general eastern freight agent, Delaware and Hudson Company.

D. L. Rupert, division freight agent, Detroit, Toledo and Ironton Railroad. Headquarters, Ironton, Ohio.

C. W. Smith, commercial agent, Cleveland, Cincinnati, Chicago & St. Louis Railway. Headquarters, Dallas, Texas.

H. B. Sperry, assistant general freight agent, Missouri, Kansas and Texas Lines. Headquarters, Kansas City, Mo.

W. T. Stevenson, assistant general freight agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Cincinnati, Ohio.

W. O. Sydnor, assistant general freight agent, Chesapeake and Ohio Railway. Headquarters, Charleston, W. Va.

Albert B. Thoeny, general agent, Western Express Company. Headquarters, Milwaukee, Wis.

O. C. Thomas, commercial agent, Missouri, Kansas and Texas Lines. Headquarters, Oklahoma City, Okla.

S. A. Townsend, division freight agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, St. Louis, Mo.

S. H. Waddell, traveling freight agent, Chicago, Milwaukee and St. Paul Railway. Headquarters, Cincinnati, Ohio.

T. J. Wall, general agent, Canadian Pacific Railway. Headquarters, Minneapolis, Minn.

Joseph A. S. Wallace, commercial agent, Western Maryland Railroad. Headquarters, Youngstown, Ohio.

H. W. Willard, commercial agent, New York, New Haven and Hartford Railroad. Headquarters, Brooklyn, N. Y.

R. W. Wirt, traveling agent, Queen and Crescent Route. Headquarters, Chattanooga, Tenn.

O. F. York, traveling passenger agent, Southern Railway. Headquarters, Raleigh, N. C.

Purchasing.

Ernest Baxter, purchasing agent, St. Louis Southern. Headquarters, St. Louis, Mo.

A. A. Dawley, purchasing agent, Denver and Salt Lake Railroad. Headquarters, Denver, Colo.

E. L. Fries, general storekeeper, Union Pacific Railroad. Headquarters, Omaha, Neb.

H. B. Martin, purchasing agent, Coal and Coke Railway. Headquarters, Elkins, W. Va.

G. W. Saul, purchasing agent, Oregon-Washington Railroad and Navigation Company. Headquarters, Portland, Ore.

G. E. Scott, purchasing agent, Missouri, Kansas and Texas Railway. Headquarters, St. Louis, Mo.

RESIGNATIONS.

Executive.

T. E. Dunaway, vice-president and general manager, Nevada-California-Oregon Railroad and the Sierra and Mohawk Railroad.

J. C. Fargo, president, American Express Company.

W. V. S. Thorne, vice-president in charge of purchases, Union Pacific Company.

Legal.

R. T. Railey, general attorney, Missouri Pacific and St. Louis, Iron Mountain & Southern Railroad.

Engineering and Mechanical.

M. C. Cleveland, engineer maintenance of way, Chicago, Indiana and Southern Railroad.

J. H. Conlan, general roadmaster, Colorado Lines, Denver and Rio Grande Railroad.

T. Keaveny, roadmaster, second district, Oregon-Washington Railroad and Navigation Company.

Operation.

W. B. Causey, superintendent, Northern division, Chicago, Great Western Railroad.

J. C. Collins, superintendent, Illinois Southern Railroad.

E. A. Gould, assistant to general manager, Cincinnati, Hamilton and Dayton Railway.

D. F. Kirkland, superintendent, Birmingham division, Atlanta, Birmingham and Atlantic Railroad.

R. S. Marshall, superintendent, Eastern division, Minneapolis and St. Paul Railroad.

W. P. Moran, trainmaster, Chicago, Milwaukee and St. Paul Railroad.

J. H. Witt, superintendent, Virginia division, Seaboard Air Line.

Traffic.

Brent Arnold, Jr., general agent, freight department, Western Maryland Railroad.

Willis Callaway, commercial agent, Winston-Salem Southbound.

J. C. Finch, assistant general freight agent, Missouri, Kansas and Texas.

C. L. Hilleary, general agent, New York Central Lines.

Luis Jackson, industrial commissioner, Erie Railroad.

W. D. Jones, traveling freight agent, Tennessee Central Railroad.

A. MacCorquodale, district freight and passenger agent, Oregon-Washington Railroad & Navigation Company.

Rufus M. Pile, assistant general passenger agent, Pennsylvania Railroad.

C. H. Roemer, traveling freight agent, Chicago, Milwaukee and St. Paul Railroad.

Purchasing.

R. Koehler, purchasing agent, Oregon-Washington Railroad and Navigation Company.

G. S. Pratt, storekeeper, Macon, Dublin and Savannah Railroad.

J. H. Stafford, general storekeeper, Union Pacific Railroad.

BOOK REVIEWS.

Terminal Facilities on North Pacific Ports.—Under the above head, the Terminal Publishing Company of Seattle, Wash., has recently issued an annual reference book on North Pacific shipping, which covers the principal ports from San Diego on the south to Nome on the north. The regulations governing these ports are given in full, and all charges that are assessed against either the ship or the cargo are included. The names and addresses of government officials, foreign consuls and others in each port, whose names and addresses are of value to masters and shippers, are given. One section is devoted to the depth of water in all the bays and inlets on the United States Coast. The customs, marine insurance, immigration regulations and matters of that sort are set forth in detail.

There are scores of tables in the work. The money of all foreign countries is reduced to its Canadian and United States equivalent and foreign weights are reduced to avoirdupois pounds. One remarkably useful table which is included and which is here published for the first time gives at a glance the amount of freight due on any shipment that is paid by its cubic measurement. With this book at his elbow a transportation man need waste no more time in figuring out rates. To find the cost of 17 cubic feet at $23.00 per ton entails no more labor than running a pencil along a line and copying down the figures.

No review of the book that does not contain its entire list of contents can give a comprehensive idea of the field it covers. The arrangement of the index is in itself a refreshing departure. As soon as one opens the front cover he finds the index, which is the first thing offered in the book. Typographically the work is easy to read and it is well and substantially bound in cloth. It should find a ready place in all marine libraries and on the desks of all busy people who have to do with shipping.

The "Terminal Facilities of North Pacific Ports" retails for $2.00 per volume and will be published annually.

The 1914 Edition of the Manual of Statistics.—Many changes of importance to the investing and stock market public have marked the past year. New issues of securities of both railroad and industrial companies have been numerous, and a variety of new organizations of that character have come into public notice. These matters are fully covered in the 1914 edition of "The Manual of Statistics," which is the thirty-sixth annual issue of that standard publication. It adequately presents the organization, finances and position of all the leading railroad and industrial companies in the United States and Canada. The figures in reference to industrial and utilities companies are presented with similar completeness, and the volume also includes statements of practically all the new organizations which have an interest for the stock market and investing public. A new and useful feature in connection with bond issues is the notation with securities of that kind showing if the company assumes payment of the United States income tax. The 1110 pages of this handsome, compact and carefully compiled reference volume present a greater fund of information for the use of investors and speculators than any other work of the kind. It also embodies ample information regarding government securities, mining stocks and the grain and cotton statistics. Its utility is increased by an arrangement facilitating references to the different sections. The volume is one which inve stors and all who are interested in the financial and other markets of the country cannot afford to be without. It is published by The Manual of Statistics Company, 20 Vesey Street, New York. Price, $5.00.

The 1914 Year Book of the Merchants' Association of New York.—The Merchants' Association's Year Book for 1914 is being distributed to the members of the Association. It gives the names of nearly 3,600 members, among whom are the leaders in 157 divisions of business and professional activity in New York City, scattered throughout the five Boroughs.

The Year Book contains the annual reports of President William A. Marble, of S. C. Mead, Secretary, and The Association's Bureau of Research, Publicity Bureau, Membership Bureau, Traffic Bureau, Industrial Bureau and Convention Bureau.

The reports, which cover the work of the year 1913, show a diversified field of activity in which results of importance to the trade and welfare of the City, to foster which The Association was founded, were achieved.

The membership list shows the membership on May 1, 1914. It represents every trade, industry and profession in the City, and consists of individuals, firms and corporations, the last two classes preponderating.

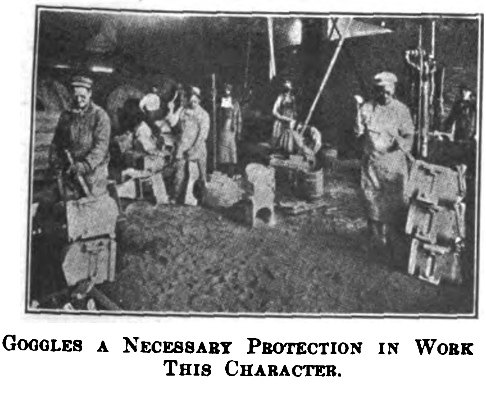
The names of the members are given in a finding list alphabetically arranged, and are repeated in classified groups, which again are subdivided by trades and industries. There are forty-eight large divisions which contain 157 sub-divisions.

The sub-divisions of the groups range from one to ten in number, with four to six as the average. There are nineteen groups in which there are no sub-divisions.

The Earning Power of Railroads.—The 1914 edition of Floyd W. Mundy's well known "Earning Power of Railroads" has come from the press. It contains its usual convenient tables of figures as to individual railroad companies brought down to date, as well as copious supplementary information and introductory chapters on the analysis of railroad reports. The book is published by the banking house of Jas. H. Oliphant & Co., 61 Broadway.

RAILWAY PUBLICATIONS.

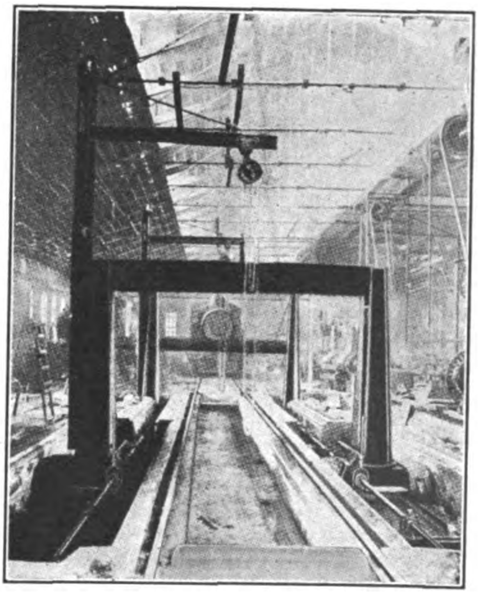
The Norfolk and Western's "Safety Magazine."—The Norfolk and Western Railway, like the New York Central Lines, has adopted the policy of publishing at frequent intervals, a safety magazine of about thirty-five pages, under the title of "Safety Bulletin." This not only contains a record of safety developments on the Norfolk and Western but includes various other matters relating to safety published either in railway journals or in the magazines of other railways. Photographs are also employed to illustrate certain features of the safety work and altogether the magazine proves an effective aid to the promotion of the safety movement on the Norfolk and Western. The accompanying illustration, showing the necessity for employing goggles in certain kinds of railway work, is a fair example of the kind that is employed from month to month.



Goggles a Necessary Protection in Work of This Character.

TRADE PUBLICATIONS.

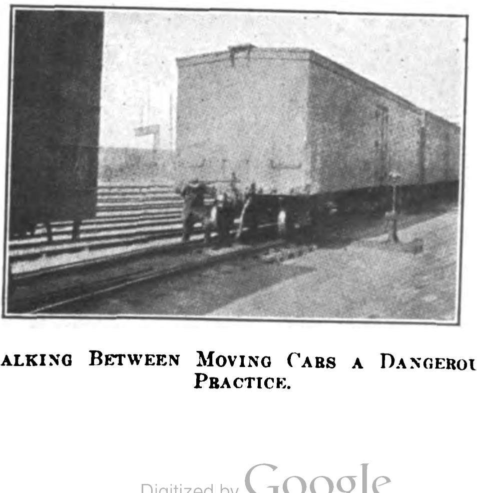
Locomotive Hoists.— The Whiting Foundry Equipment Company, of Harvey, Ill., has recently issued a locomotive hoist catalogue which sets forth the advantages of this economical machine for wheeling locomotives and fully describes the construction and operation. A number of photographs of actual installations show the different steps in operating the hoist. A list of the various railroads using this device is also included. The accompanying illustration gives an excellent idea of the appearance of the hoist.



Type of Locomotive Hoist Constructed by Whiting Foundry Equipment Company.

Latest Safety Bulletin of Chicago and North Western Railway.

THE Chicago and North Western Railway has issued its safety bulletin No. 6, which calls particular attention, as shown by the accompanying photograph, to the danger of at-



Walking Between Moving Cars a Dangerous Practice.

tempting to walk between moving cars. This is provided for by a rule of the Company which prohibits standing upon the foot boards of engines in motion, while coupling the cars, or going between cars or any car and engine while in motion or walking directly in front of a moving car or engine for any purpose whatsoever.

In spite of this rule, however, employes are constantly taking risks of this character which often end disastrously.

BOOK REVIEWS.

The Express Service and Rates.— By W. H. Chandler, Assistant Manager, Traffic Bureau, The Merchants' Association of New York. With appendix of test questions, and numerous tables and charts. 340 pages. Published by the La Salle Extension University, Chicago, Ills.

Mr. W. H. Chandler, in his treatise on "The Express Service and Rates," presents a work of timely and lively public interest. The vast field of express service has, strange to say, never been adequately treated. Stimson's "Express History" treats of the historical side, but it is now out of date. Various works on transportation devote short chapters to express service, but there has never been an adequate treatment. This fact, even if there were no other reasons for interest in Mr. Chandler's treatise, just published by the La Salle Extension University, Chicago, should make this carefully prepared manual noteworthy.

But there are other reasons. On February 1st, of this year, the new express rates went into effect. The Interstate Commerce Commission's activity, the parcel post competition, and other events are directing popular interest to this subject. Furthermore, the recent announcement that the United States Express Company is to discontinue brings another reason for popular interest.

It is interesting to note, in this connection, the following, concerning the United States Express Company, from the chapter on "Internal Organization of Express Companies" of Mr. Chandler's book:

"The United States Express Company is a joint-stock association or partnership composed of persons associated together to do express business each with full partnership liability for the company's obligations. It was organized April 22, 1854, in the State of New York, for a term of ten years which term has been several times extended.

"At the time of the organization of the United States Express Company, the ownership was divided into 5,000 interests. From time to time and down to March, 1876, the number of interests was increased, until at the last mentioned date the ownership was divided into 70,000 interests. During the month of September, 1887, 15,000 interests were sold for $1,000,000, which sum was at that time paid into the treasury of the company."

The new publication is more a practical than a scholarly effort, though no objection can be brought against it on that score. It covers the whole express field, from history, organization and service to rates and classifications. Express statistics and finance are subjects carefully treated; and both the old and the new rate-making systems are fully explained. This is of especial interest since the rates are lowered considerably. The relation to the parcel post is also carefully discussed.

Express forms, commodity rates, and all the details of the express work that a man who makes this his life work wants to know are practically discussed. Dozens of pages are given over to the actual reproduction of express material, such as classifications, documents, contracts, receipts, directories and schedules. Although most of the treatise is devoted to American express service, there are chapters devoted to Canadian express service and foreign service. The work should be very helpful to the occasional express shipper, as well as to the student of transportation. It forms a part of a series of similar treatises which serve as a basis for the course by correspondence in Interstate Commerce and Railway Traffic given by the La Salle Extension University, Chicago.

Improving French Locomotives.

From Our London Correspondent.

FOR a long time now very extensive tests have taken place on the Paris, Lyons and Mediterranean Railway of France between simple and compound locomotives. The results happen to be of more especial interest to countries which have to pay high prices for import coal, but railway corporations everywhere will find them worth careful study in view of the increasing importance of the fuel economy question. The tests I refer to were made on the most difficult section of the line between Paris and Marseilles, from Laroche to Blaisey-Bas, a continuous incline of saw-tooth profile, 133 km. long, termininating in a gradient of one in 125, the total vertical rise being about 1,050 feet. With a load of 456 tons (one ton equals 2,240 pounds) behind the tender the simple engine ran the distance in 98 minutes 45 seconds, developing an average of 1,178 drawbar h. p., and consuming 3,870 kg. of coal, or 1.982 kg. per drawbar h. p. hour, and 14.2 litres of water per h. p. hour. With 487 tons behind the tender the compound engine ran the same trip in 87 minutes 2 seconds developing an average of 1,246 drawbar h. p., consuming 3,116 kg. of coal (1.58 kg. per drawbar h. p. hour) and 12.28 litres of water per h. p. rour. Thus the compound hauled a load eight per cent heavier in eleven per cent less time with a total coal consumption reduced by nearly twenty per cent and a coal consumption per drawbar h. p. hour reduced by 20.3 per cent.

In a second run with a load of 487 tons the time taken by the compound was still less—85 minutes 39 seconds—but the higher speed entailed a greater consumption of coal—3.199 kg. With a smaller load the speed of the compound was even more remarkable. A load of 278 tons was hauled in 77 minutes 14 seconds, the consumption of coal being 2.07 kg. per drawbar h. p. hour, while the simple engine, with 272 tons took 90 minutes 40 seconds, and burnt 2.531 kg. of coal per drawbar h. p. hour. In this case, therefore, the compound saved fourteen per cent in time and eighteen per cent in fuel. The average start to stop speed was 64.3 miles an hour.

The dynamometer records reveal extreme regularity of speed and power with the compound, whereas the lines of speed and power with the simple engine are "hillocky," indicating that it was specially sensitive to variations in resistance due to ups and downs of the line. They show that the boiler of the simple engine was more severely taxed to supply steam for four large cylinders than was that of the compound to supply two small cylinders. A small boiler, therefore, suffices for the compounds and the latest engines are designed accordingly. In consequence of this demonstration of the superior speed, power and economy of the compound, and its greater elasticity, or higher power range, the Paris, Lyons and Mediterranean has ceased to build simple engines, and has at work or under construction 85 new compounds of the Pacific type, weighing 1.6 tons less than the simple engines yet seven or eight per cent more powerful than the compound with which the above results were obtained. Behind these engines travelers to the Mediterranean will be conveyed in heavier paying train loads, at higher speeds, and at less cost for fuel. The engines are rated for ten per cent heavier trainloads, and at the same time their speed capacity is ten per cent higher than simple engines of greater weight.

The Paris, Lyons and Mediterranean has also conducted elaborate tests on a large scale between engines of the same type using saturated and superheated steam. These tests showed that while there was an economy in coal of about seventeen per cent with superheated steam during the tests, yet the power developed per cubic foot of steam used and per pound of steam pressure entering the cylinder, was from fourteen to twenty-three per cent less than with saturated steam. These figures agree fairly well with the steam tables generally used, which show that, at the pressure and maximum temperatures employed by the Paris, Lyons and Mediterranean the specific internal energy in each cubic foot of superheated steam is twenty-three per cent less than in theoretically dry saturated steam.

In practical working there is an important difference between the relative economies possible with superheating and with compound expansion. With superheating an economy of seventeen per cent in coal can be guaranteed provided that the steam is kept at a certain temperature, almost uninterruptedly. With a compound engine having a ratio of cylinder volumes of 1 to 2.85 the draughtsman can guarantee from his preliminary calculations a coal economy of 25 to 35 per cent provided the drivers are unable to alter the difference of the cut off in the two stage cylinders by more than three per cent; the engine then economizes thirty per cent of steam at each stroke, and the economy of coal will be about equivalent, no variation being possible. But with superheated steam the conditions that influence coal consumption vary at every moment, with the height of the water in the boiler, the condition and depth of the fire, the amount of regulator opening, the distance run without stopping and other factors. The result is that the coal economy realized in trials falls off in regular service by from ten to twenty per cent, sometimes leaving in the experience of the Paris, Lyons and Mediterranean and Italian State Railways a saving of only three to eight per cent on a year's working.

The trials which were carried out by the Paris, Lyons and Mediterranean and which resulted in the application of superheaters to the boilers of its compound express engines, gave the following results on the Laroche to Dijon line:—Coal consumption per h. p. hour with saturated steam 1.593 kg. and with superheated steam 1.313 kg., the saving with superheating being thus 17.57 per cent. In regular working during fourteen months the monthly consumption of coal per 100 ton-kilometers run with the same engines and services averaged 4.4 kg. with saturated steam, and 4.08 kg. with superheated steam, or an economy of little over seven per cent. This may be regarded as the saving in coal effected on the average by the application of superheating to engines of the Pacific compound type, and the drop in economy between the test-trip figure and the annual figure is therefore about ten per cent.

What will be the drop between the economy of the new compound engines as shown by the tests already referred to, and their annual economy? To judge by the difference between test results and annual results obtained elsewhere as between simple and compound engines, the probability is that the drop will be only three to five per cent or less, according to the loading of the trains. On the Paris, Lyons and Mediterranean the drivers cannot interfere with the prearranged expansive working as they can on the engines of other French lines having two sets of reversing gears.

PERSONALS.

J. P. Hayden, auditor of the Texas State R. R., was suddenly killed in an automobile accident May 14th, at Rusk, Texas.

Edward Hogan, roadmaster of the Lake Erie & Western at Tipton, Ind., died on May 13th at Bloomington, Ill.

J. T. Loree, trainmaster of the Delaware & Hudson at Oneonta, N. Y., has been appointed superintendent of the Susquehanna Division, with office at Oneonta, succeeding J. H. Rosenstock.

Irving Mitchell, formerly for 26 years general dairy agent of the Chicago, Rock Island & Pacific, died on May 12th, at his home in Vinton, Iowa.

Benjamin A. Newland, general manager of the Tennessee Railway, was killed on May 9th, in an accident while riding in a motor car on that road, near Oneida, Scott County, Tenn. He was born in February, 1852, at Lenoir, N. C., and began railway work in 1876, and was consecutively to 1888, conductor on the Western North Carolina and the Richmond & Danville. He was then traveling passenger agent on the East Tennessee, Virginia & Georgia and the Chicago & Alton until 1892, when he was appointed traveling passenger agent on the Sea-

DIVIDEND NOTICE.

UNITED STATES RUBBER COMPANY.

1790 Broadway, New York, June 25th, 1914.

The Board of Directors of the United States Rubber Company has this day declared from its net profits a quarterly dividend of Two Per Cent (2%) on the First Preferred Stock, a quarterly dividend of One and one-half Per Cent (1½%) on the Second Preferred Stock, and a quarterly dividend of One and one-half Per Cent (1½%) on the Common Stock of the Company, to stockholders of record at 3 P. M., on Wednesday, July 15th, 1914, payable without closing of the Transfer Books, July 31st, 1914.

W. G. PARSONS, Treasurer.

"Pittsburgh Perfect" Railroad Fencing

Bought by leading railroads of the United States and Canada because it excels in strength and durability, and affords perfect protection to the right-of-way. Made of special formula Open Hearth wire, HEAVILY AND THOROUGHLY GALVANIZED. ELECTRICALLY WELDED JOINTS. A one-piece fabric, easiest to erect. Write for catalogue and prices.

PITTSBURGH STEEL CO., PITTSBURGH, PA.

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Manufacturers of "Pittsburgh Perfect" Brands of Barbed Wire: Bright, Annealed and Galvanized Wire; Hard Spring Coil Wire; Twisted Cable Wire; Telegraph and Telephone Wire; Straightened and Cut Wire; Fence Staples; Poultry Netting Staples; Regular and Galvanized Steel Wire Nails; Coated Nails; Large Head Felt Roofing Nails; Bale Ties, and "Pittsburgh Perfect" Fencing, all produced in our furnaces and mills from the ore in our mines to the finished material.

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Galena Railway Safety Oil, made especially for use in headlights, marker and classification lamps.

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Railway World

VOL. LVIII. AUGUST, 1914 No. 8

Important Developments in the Transportation Field

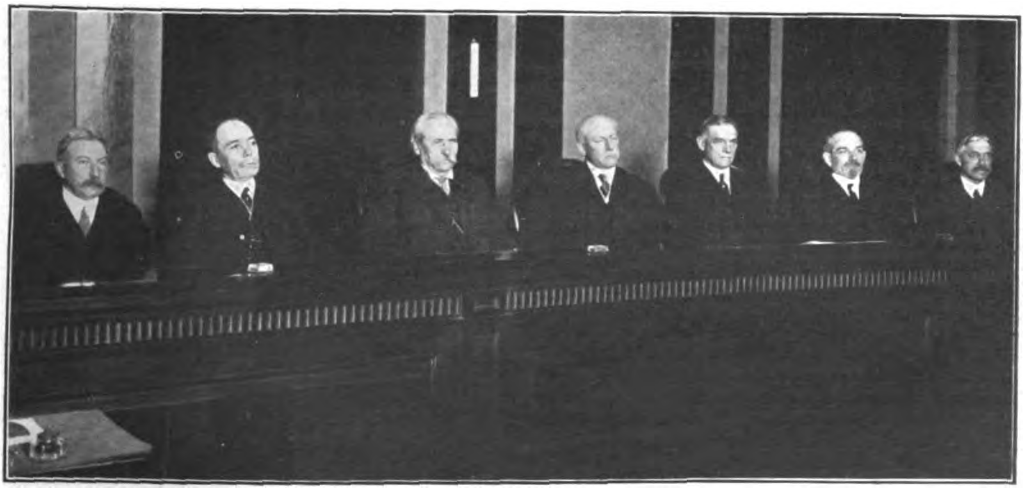
THE ADVANCE RATE DECISION

After an interminable delay, the Interstate Commerce Commission on August first rendered its decision on the petition of the railroads east of the Mississippi and north of the Ohio and Potomac Rivers, for permission to make a general advance in freight rates of five per cent. The best that can be said of the decision, is that though hopeful in tone, it is keenly disappointing in practical results. In a measure at least, it is a victory for the railroads, in that it shows that they have sustained their contention in favor of a percentage increase in rates as a means of meeting their increased expenses, but on the other hand, the actual gain in earnings which the decision promises is but a mere fraction of what the carriers asked for.

The proposed increases, had they been put into effect, would have yielded approximately $50,000,000 a year, while the decision, according to various estimates, will increase the carriers' income between $9,000,000 and $14,000,000 a year, although the opportunity is offered to the railroads to increase this sum largely by future readjustments, which the Commission suggests, and which refer to certain freight rates which are abnormally low, passenger rates, and the elimination of certain allowances. As to permitting the five per cent increase, however, only the carriers in Central Freight Association territory are allowed to apply this method, and only in specified instances. A general increase of five per cent in the balance of Official Classification territory is denied in totum, and the only benefit it may be possible to derive from the decision for the roads in this section, rests in the application of the various suggestions which the report contains.

The opinion was written by Chairman Harlan and is concurred in by Commissioners Clements, Clark, Meyer and Hall. Commissioners McChord and Daniels filed dissenting opinions, the former arguing that if the Central Freight Association were given five per cent advance, all the roads were entitled to it. To quote from his report, "The majority has cast the burden upon the commerce of a part only of this territory when * * * * it should be borne by the entire territory, not alone to maintain an equality in the rate adjustment, but to augment the revenues which the Commission has found that the carriers need."

Commissioner Daniels took even a more decided stand than Commissioner McChord and came out flat-footed for a gen-



THE INTERSTATE COMMERCE COMMISSION AS NOW CONSTITUTED.

READING FROM LEFT TO RIGHT: COMMISSIONERS HALL, McCHORD, CLEMENTS, HARLAN, CLARK, MEYER AND DANIELS.

eral five per cent increase, holding that this increase should have been granted for the entire territory because present revenues are not sufficient to afford a fair return upon the capital invested and to attract such additional capital as is necessary to the public interests. Commissoner Daniels further asserted that the decision had been delayed unnecessarily by combining the issue of the rate advance with an investigation to determine methods by which revenues might be conserved, without an advance of rates.

As surely as contracting revenues and growing expenses cannot go on indefinitely and leave any enterprise self-sustaining, the time has come for a public awakening to the railway problem. Commissioner Daniels, in his dissenting opinion in the Eastern rate advance case, has raised the caution signal. Its import should be grasped bv every one having at heart the welfare of the country, inextricably interwoven with an efficient transportation system. To quote from his decision:

"For more than a decade the operating and maintenance expenses of the railroads of the United States have constantly risen. The rates charged, on the other hand, have been either static or declining.

"Unable to raise their rates without the sanction of this Commission the railroads have found that the margin between their receipts and their outgo has progressively narrowed; that their net profit from operation has tended to decline; that their operating ratio—the number of cents out of every dollar received which are absorbed by the cost of conducting their business—has steadily increased.

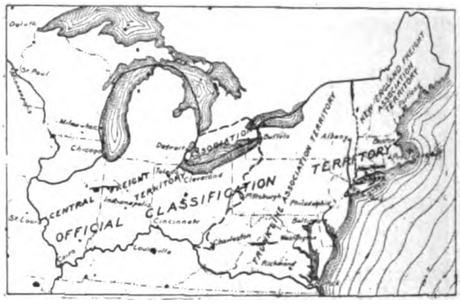
"Despite recent investments of hundreds of millions embodied in extensions and improvements, the addition to net operating income has been meagre in the extreme.

"In conspicuous instances, despite additional investments, there has been an absolute decrease in net operating income; this decline in net earnings has occurred during a period when carriers have handled an increasingly greater tonnage and carried more passengers than ever before. While furnishing greater and better service their net operating income has progressively dwindled.

"On the present property base * * * of $6,365,000,000 a net operating income of $269,000,000 yields a ratio of return for 1914 of 4.22 per cent.

"This disclosure is convincing that the return received, not on security issues, but on the book valuation of the property actually used in the service of the public, is wholly inadequate, when gauged from the standpoint of justice to the carriers and on the wider score of a continuance of adequate service to the public.

"That any such rate of return is compatible with railroad prosperity or that on such a showing additional capital in the vast sums annually required for extensions and betterments can be obtained by the sale of new railroad securities, seems only remotely within the bounds of possibility.



Official Classification Territory, showing sub-division into New England, Trunk Line and Central Freight Association Territories. Central Freight Association Territory was the only sub-division for which increase in rates was granted.

"It is becoming increasingly clear that passenger traffic does not bear its proper share of the joint costs incurred by the carriers for the transportation of freight and passengers. But it is even more clear that as a practical matter passenger fares cannot be speedily re-adjusted upon a higher basis. In recent years State Commissions and State Legislatures have established maximum intrastate passenger rates.

"The activity of the States in this respect has been so general that the carriers no longer can fairly be expected to look upon their intrastate passenger traffic as a possible field for the substantial augmentation of their revenue.

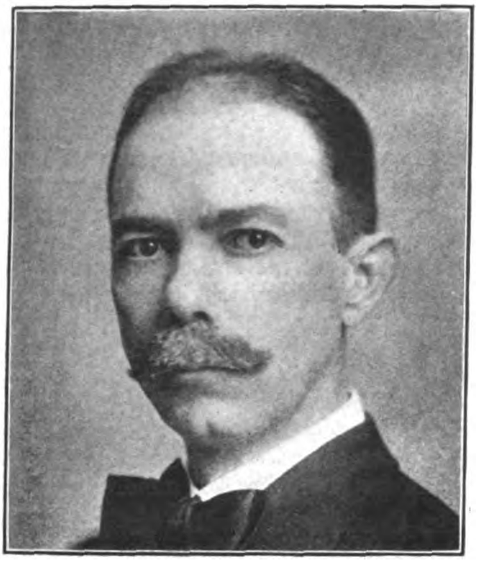
"The world-wide phenomenon of rising prices is by this time no novelty. Since 1906 the average rise in the world's price level is estimated at from 30 to 50 per cent.

"This rise in the price level must eventually be reckoned with in railroading. For a time its effects may be masked by adventitious increases in the volume of traffic, but this temporary relief in its very nature is uncertain and sooner or later the difficulty is sure to re-appear. For a time it may be circumvented by extraordinary economies but in its nature it is inexorable.

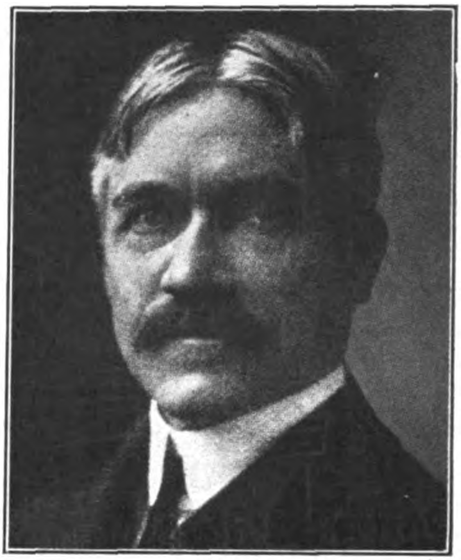
"It must be faced, not trifled with."

Viewed in its most hopeful light, the decision is a severe blow to the carriers and it is, to say the least, unfortunate that the Commission, under the circumstances, did not grant a more immediate and substantial relief. Certainly the roads proved beyond peradventure, the necessity for the full five per cent increase and while the Commission, it may be assumed, aims to serve the public by withholding their permission to make rate advances, the public, in the long run, will certainly be the chief sufferer from the inability of the carriers to procure the needed capital for the improvements and extensions necessary to conduct a progressive plant.

At this point we naturally turn to the composition of the Commission and their interest in, and relation to this most important subject. We make no comment on the



C. C. McChord.



Winthrop M. Daniels.

Commissioners McChord and Daniels dissented from the majority opinion, the former holding that if the rates were increased in Central Freight Association Territory all of the Official Classification Territory should be similarly dealt with, while the latter declared for a five per cent. increase in the entire territory involved.

honest effort of the Commission to deal with these momentous questions in a manner fair to all concerned, but the conclusions strongly suggest the absence of proper appreciation of the broader issues that were involved in the case. There has been a growing opinion that the carriers' interests have not received the fullest protection at the hands of the Commission, and this is evidenced by innumerable decisions against the carriers, and it would almost seem that conclusions are reached on preconceived ideas rather than from the definite facts disclosed.

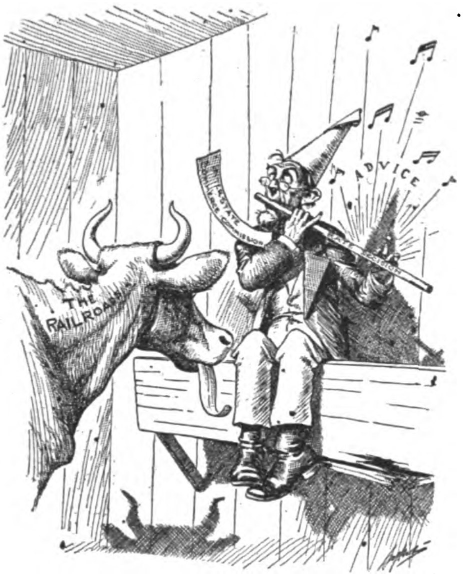
Those in charge of the case for the carriers were men of long and practical experience in the respective fields of operation, traffic and financial needs of the roads. With most deliberate and careful preparation all aspects of the existing condition of the carriers were honestly presented to the Commission, and this presentation received an extended support. This presentation was made on behalf of thousands of employes, stockholders and security owners, and honestly portrayed the needs, under existing conditions, of these interests.

Seemingly the Commission gave no weight to the integrity of purpose, and placed little value on the experience, knowledge and ability of the representatives of these interests to accurately make known their needs, and the Commission has assumed, notwithstanding this presentation, that it knew best as to the carriers' requirements in this instance.

The Commission, at the present time, is composed of four Democrats and three Republican members. Before occupying their present positions, four of these men were lawyers, one of them a professor of political economy, one a school teacher and professor of economics and one a railroad brakeman and conductor and vice-president of the Order of Railway Conductors. In the hands of these men, none of whom has had the advantage of personal experience in the consideration of the great problems of railroad management and railroad financing, apparently rests the future of our transportation systems. The only practical experience they have reecived has come through the testimony of those who really know, and as the Commission, on many occasions, has shown a disposition to discredit railway authorities and to form its opinions on preconceived ideas and theories derived very largely from sources antagonistic to railway interests, it can readily be appreciated that railway management views with apprehension the continued enlargement of the powers of that body.

Certainly the rate decision itself, affords the carriers no adequate relief, displays either lack of appreciation or sympathy with the real requirements of the carriers and in certain particulars, brushes aside, with an utter disregard of its importance, accumulated railroad knowledge built on practical experience of nearly a century.

The decision indicates that the Commis-



THE TUNE THE OLD COW DIED OF
There once was a man who had a cow,
And he had nothing to give her;
So he took up his pipe and played her a tune,
"Consider, good cow, consider!"

(From *Philadelphia Public Ledger.*)

sion is attempting to revolutionize the whole science of transportation instead of sitting as a judge to decide upon the simple question of reasonable rates, and this is clearly pointed out in the dissenting opinion of Commissioner Daniels. While railway officials are trying to accept the decision in an optimistic spirit, its influence is likely to prove both repressive and unwholesome.

The Commission undoubtedly makes an honest effort to deal with these momentous questions in a manner fair to all concerned, but its utter lack of financial responsibility, permits it to strangle an industry, or to at least experiment with it in a most dangerous manner, where, were it financially responsible, it would assume an entirely different attitude. Furthermore, the Commission, while composed of remarkably able men, has little technical knowledge of the many tremendous problems and difficulties involved in operating a modern and progressive railway plant and, therefore, lacks that sympathy which such technical knowledge always insures. Furthermore, the very nature of its work apparently places the Commission more in sympathy with the demands of the public than with the problems of the carriers, and it is little to be wondered at that the latter feel they have grave cause for apprehension in the developments of the future.

The one hopeful sign of the decision is that it helps to lighten, but only in a small measure, this apprehension as to the future, for it at least outlines, although in none too definite a manner, the methods which may be employed to augment revenues. Whether, however, the carriers may eventually be able to procure sufficient relief in the manner suggested by the Commission, is of course a matter largely for future determination. The outlook, however, is far from satisfactory and the entire industry has received a severe setback in not being permitted the immediate relief of which it stood so urgently in need. The decision, coming as it did, on the heels of the outbreak of the war in Europe, attracted the minimum attention and it has been impossible to measure what its effect might have been under more normal conditions.

The Commission, in its report, also took occasion to severely rebuke the carriers for what it considered constituted an organized effort to create public sentiment favorable to the five per cent increase. In view of the fact that this campaign was conducted openly, that it was subject to the most rigid tests of honorable procedure, and that, as representing hundreds of thousands of American citizens financially interested in the success of the railroads, the carriers had a perfect right to present their cause before the bar of public opinion, it is difficult to understand on what grounds the Commission finds it necessary to criticise the methods employed. Heretofore, the cry has been that the railways should take the people more into their confidence and now that such an effort is being consistently made, it hardly seems the duty, or within the province of the Commission, to discourage it. Certainly the Commission does not desire to set itself above the people and certainly the people have a perfect right to receive full information regarding controversies of great public interest.

Railway executives as a rule, appear adverse to expressing an opinion with reference to the decision. While it is clear that the great majority of them feel that the relief offered is pitifully small in view of the requirements of the case, they appear to feel that nothing can be gained at the present time in continuing the controversy. Many of them are now engaged in considering means and measures by which the relief suggested by the Commission, can be most rapidly accomplished. However, a few officials have publicly expressed themselves with regard to the decision and among such expressions have been the following:

President Markham, of the Illinois Central:

"While the decision as handed down by the Interstate Commerce Commission is not what was expected, nor what the railroads are justly entitled to, the report should be accepted and business be allowed to proceed along its natural course, as regards railroads and the public alike. The fact that the Commission has seen fit to recognize the railroads in their demands is of more importance than the immediate amount of money involved."

* * *

E. P. Ripley:

"The decision (in the advanced rate case) was a decided disappointment to all railroad men. The Commission appears to have given very grudgingly a fractional part of what was asked and what was proved to be needed. While I have not studied the decision, the published summary sounds to me as if it were a stump speech on the part of political aspirants. It is far from being the utterance of a judicial body. I cannot see where the roads interested will get much relief. About the only feature of the decision that is at all satisfactory is the mere recognition of the fact that the railroads need some relief."

* * *

Judge R. S. Lovett:

"It is extremely unfortunate for the whole country that the Eastern trunk lines were denied an increase in freight rates. The ruling in the Central Freight Association territory is not so bad. The Government cannot continue to deprive the carriers of an increase in rates and allow increased expenses to go on. The two must be dealt with sooner or later."

* * *

Ralph Peters:

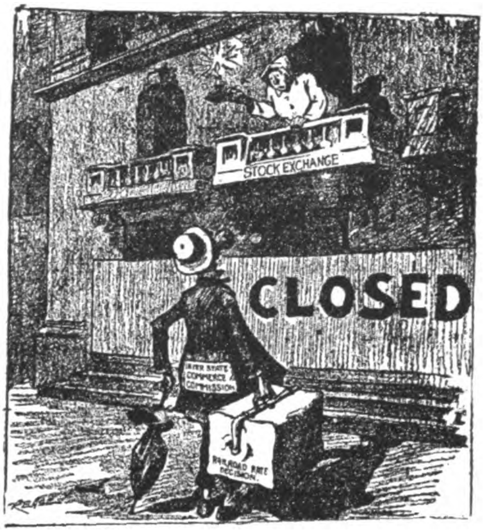
"I am very much disappointed. I had felt that the case of the railroads had been clearly proved. A ray of hope, however, lies in the making of extra charges for delivering cars on sidewalks, etc. If the railroads cannot raise rates they cannot raise wages, and they cannot continue extensive improvements. They will have to decrease facilities and class of service given the public. The decision means that the railroads will have a very hard and long road to travel for some time to come. They will not be able to increase their capital, because they cannot show sufficient earning capacity. It means that the railroads will have to run with their noses close to the grindstone."

* * *

F. D. Underwood, president Erie Railroad Company:

"There are no direct advantages to any railways in the territory covered by the decision, nor are the ways pointed out by it as a means of conserving revenue, worth while. It sets forth some constructive and valuable statistical tables. One cannot but wonder if they are worth as much as their cost. The axiom that 'when railways fare illy the business of the country shares in the depression' carried no weight in making the verdict.

"The railways' presumption was that they had made a case, and in this they were supported by their counsel and by a large contingent of intelligent freight rate payers. These now stand silenced, but not convinced. Meanwhile the business of the country is apathetic and must continue so until railway conditions improve. This is a fact that political doctors now in power do not seem able to recognize."



A Belated Arrival.
(New York World.)

* * *

Robert W. Davis, freight traffic manager, Buffalo, Rochester and Pittsburgh Railway:

"The conclusions of the Honorable Commission were, to us, a very great disappointment. We were hopeful that the carriers in trunk line territory had well sustained the importance to them of the modest advance applied for with sufficient proof, and that at least the proposed advance in class rate structures, which was distributed uniformly throughout the territory, would be favorably acted upon. Also that a large number of commodity rates would at least be subject to a compromise basis of advance. The dissent of the Honorable Commissioners, Messrs, McChord and Daniels from the majority conclusion, justified our hopes.

"I am of the opinion, however, that the situation is yet hopeful for the future welfare of the carriers. The suggestions advanced in the decision will be promptly acted upon, and will unquestionably, if indirectly, mean some substantial benefits, although it will take a long time and a large increase in the volume of traffic to even overcome in net, the tremendous burden of expense placed upon the carriers in the investigation of their application for the advance."

* * *

F. A. Delano, president Chicago, Indianapolis and Louisville Railway:

"It is perhaps hardly proper for me as I am about to leave the railroad service, to accept your suggestion, but I am at least making this very brief statement. The railroads did not get what they asked for, but they can get a good deal of benefit from the dicision of the Interstate Commerce Commission, if they read it with interest and with a disposition to make as much out of it as possible.

"The Commission's decision has a good deal of 'meat' in it and makes a good many suggestions with respect to abolition of objectionable methods and practices and suggests the necessity of a decided reformation in rates in C. F. A. territory and invites railroads to advance some especially low rates more than five per cent. If the railroads accept this decision as a sincere suggestion of what may be accomplished, I think they will get a good deal of benefit from it."

* * *

Frank Sullivan Smith, receiver Pittsburgh, Shawmut and Northern Railroad:

1. The decision of the Commission is a distinct recognition of the validity of the claim of the railroads that they are entitled to an increase in freight rates.

2. The Commission has committed an act of injustice in restricting the increase to railroads West and North of an arbitrary line drawn from Pittsburgh to Buffalo, inasmuch as there are railroads easterly of that line to which an increase is more important than some railroads to which it is granted. For example, this railroad encounters physical difficulties in operation in crossing the back bone of the mountain range between the Mississippi River and the Atlantic Ocean, involving unusual grades and curvature. To illustrate, a ton of freight moving from Kittanning, Pennsylvania, to Hornell, New York, must be raised 3,653 feet to overcome 326 feet difference in elevation between the two cities. Conversely, a ton of freight south-bound must be raised 3,327 feet to overcome the same difference in elevation, requiring eleven times the amount of work than would be required to overcome the actual difference in elevation.

Eighty-one per cent of the operating revenue of the railroad is derived from the transportation of bituminous coal, at an average rate of 4.72 mills per ton mile. The average revenue per ton mile of the railroads in the territory covered by the railroads applying for increase of freight rate is 6.06 mills per ton mile. Thus the rate on the chief product transported on this railroad is 1.34 mills per ton mile, or 22 per cent lower than the average rate obtaining on railroads in such territory. The cost of freight operation per ton mile in 1907 was 9.625 mills per ton mile; in 1913, it was 4.025 mills per ton mile, a decrease of 58 per cent. This would show that this railroad has exercised great economy, but that such economy has not been sufficient to put it upon an equality, in the freight rate received, with the average of other railroads in the classification territory, showing that the "high cost of living" of this railroad is entitled to some governmental relief, which would not obtain if this railroad had been permitted by the Commission to charge merely fair rates for freight transportation.

3. The decision of the Commission, together with the diminishing return from railroad securities due to increased cost of operation without increase in rates, will still further deter capital from investment in such securities for the construction of needed lines of railroad. If this is permitted to continue, it will result in the impairment of securities held by life insurance companies and bring distress to thousands of beneficiaries. Already this has been experienced by savings banks which have been supposed to be hedged about by the strictest conditions which the law can impose.

The decision of the Commission, while admitting the principle contended for by the railroads, is unjust and unfair in its application.

C. S. Sims, vice-president Delaware and Hudson:

In considering the freight rates of American railways it is necessary—

First, To realize the vast expanse and mileage of the country;

Second, To realize that for many years the American railway traffic manager's ideal has been to make the products manufactured, produced or grown along the rails of his company reach the broadest, greatest possible markets, frequently regardless of resulting very low rates; the traffic manager knowing that the local, the short haul, and the other business of a profitable manufacturing establishment or other business will warrant the few low rates necessary to greatly enlarge the market of this particular concern and thus keep it and its employes fully occupied;

Third, That these freight rates are lower than are found in any other place in the world, but this is largely due to the broadening out of the market and the shipping of goods great distances.

We concur in the opinion of Commissioner McChord—"To approve in central freight association territory the increased rates proposed in the majority report and to deny increases to the trunk lines appears to me to be unwarranted by the facts of record and not in harmony with the general basis of rate adjustment that has so long existed in official classification territory—"

And with Commissioner Daniels—"This disclosure is convincing that the return received, not on security issues, but on the book valuation of the property actually used in the service of the public, is wholly inadequate, when gauged from the standpoint of justice to the carriers and on the wider score of a continuance of adequate service to the public."

The Commission in its majority report states:

Page 408—"We suggest that all the railroads in official classification territory examine carefully their freight rates, rules and regulations with a view to increasing rates that are found to be clearly unremunerative, and modifying burdensome rules and regulations relating to minimum weights and similar matters where this may justly be done. The compilation prepared by the Commission of answers of the carriers to our questions in this proceeding calling for a statement of their earnings on representative traffic discloses many rates which yield barely enough in revenue to pay adequately for the mere use of the equipment. Our compilation also shows that a large proportion of traffic in many commodities is yielding less than seven cents per loaded car mile, although the record shows that railroad men ordinarily consider that the average earning per loaded car mile should be more than twice that amount. Many unremunerative rates had their origin in fierce competition for traffic or under the menace of the big traffic of powerful shippers. Many such rates have doubtless been continued through ignorance of the loss they entail upon the carriers."

Page 419—"Instances will be found of ton mile earnings as low as 0.58 of a mill and car mile earnings as low as 1.69 cents. Other rates, while yielding higher car mile earnings, appear very low when the value of the commodity is considered. For instance, there will be found through or proportional domestic rates on copper bullion below two mills per ton mile; the average yield on 676 cars of this commodity, as disclosed by the exhibits mentioned, was only 2.73 mills per ton mile and 11 cents per car mile, whereas the average yield on 2,486 cars of pig iron was 4.31 mills per ton mile and 17 cents per car mile. A compilation prepared by the Commission showing the market prices for a series of years of the commodities covered by the traffic exhibits together with representative rates thereon prevailing from time to time, will later be made available."

Page 391—"Passenger fares are paid directly to the carriers by those making use of the service, and they know what it costs them. Payments for freight charges, while less direct, are none the less actual. The general public does not know, and probably does not stop to consider what proportion of the cost of a ton of coal, or of the price of a dwelling, or the rent of an apartment represents freight charges, but the cost of freight transportation enters into the cost or selling price of practically everything used by the public. In many cases to be sure freight charges represent but a small proportion of the total cost of things used or consumed, but it is quite probable that the average family pays much more in the course of a year as freight charges that it does for passenger fares. We know of no provision of law under which we should be justified in increasing freight rates to provide a return upon property used exclusively in the passenger service, much less to take care of losses incurred in such service. In our opinion each branch of the service should contribute its proper share of the cost of operation and of return upon the property devoted to the use of the public."

While concurring with Commissioners McChord and Daniels in their statements that the railways proved the great need of increased rates, we agree absolutely with the Commission in the desirability of all railways in classification territory increasing those particular rates where the revenue return is very small and where increase in the rates will not disturb the market or sale condition of the article.

We also thoroughly agree in the statement relative to need of increasing passenger train earnings: at only a few points in the entire country do they actually carry any part of the overhead. It can, however, best be done by a decrease in the amount of train mileage, cutting down the service on branch lines to a figure more nearly in keeping with what the revenue warrants.

The Commission's influence and recommendations as to increasing those rates in classification territory which are very low, in decreasing unprofitable passenger train mileage, and in possibly increasing passenger train rates, especially mail pay, is so great with the general public and with the various State Commissions as to be of invaluable assistance to the carriers in accomplishing these desirable results, and if the Commission will use its great power and influence in behalf of the carriers the effort to bring about an increase will have been thoroughly warranted.

What a menace to the country's prosperity, the bankers consider the decision, is well indicated by the following letter sent on August 17th by J. S. Bache and Company of New York to over 32,000 bankers throughout the United States:

Dear Sirs:

Owing to the great European war, our financial situation is under an emergency pressure, because threatened by the unloading of railroad securities held by Europe. This was only temporarily halted by the closing of public markets.

Our securities are in disfavor because of low railroad earnings.

They should at once be made attractive to capital all over the world.

This cannot be done unless our railroad securities are given a safe margin of earnings. The value of all other securities depends upon the success of the railroads.

The railroads have proved and the Interstate Commerce Commission has admitted the necessity of enlarged revenues, but the rate decision grants only a meagre and insufficient pittance—not more than enough to increase earnings one-eighth of one per cent on the total capital of the eastern railroads which made the application.

This small advance will have no effect in restoring and establishing the confidence of the large investors here and the holders of our securities abroad.

These securities will be sent over as soon as possible to do so, to draw our gold or its equivalent, and they will not be taken up freely by our own large investors because they have not sufficient confidence in the success of the railroads under the present scale of low freights.

Rates need to be advanced materially in order to give such a margin of earnings that railroad securities will be sought.

Further than that; the credit system of the world has been upset. We have lost Europe as our bankers. We not only cannot hope to place new securities in Europe: We are compelled to take back vast quantities of existing securities which for many years Europe has been absorbing. Every year our railroad systems have to spend enormous sums to increase and extend their transportation facilities to meet the growing demands of American commerce. Where are the railroads to obtain the money with which to make the needed additions and improvements? They cannot turn to Europe: American investors are not attracted under present conditions; they will have to look to their earnings until the confidence of investors is restored. A liberal increase in earnings is absolutely necessary to keep up requirements of the transportation systems of the country.

Needed raises will start all the business of the country towards a prosperous level, because of the confident buying of railroad securities which will then take place, and because of the heavy purchases which the railroads will then be able to make, but cannot make now because of lack of funds and credit.

This is now a national question and relief should be given to the railroads immediately, in view of the emergency necessity.

We, therefore, earnestly suggest that you bring this matter at once to the attention of your representatives in Congress, and if you agree with us, urge them to favor the passing of—

A joint and concurrent resolution of the House and Senate directed to the Interstate Commerce Commission, requesting it, because of the emergency situation with reference to railroad securities, to review and revise the decision in the recent application of the eastern railroads, and in their discretion and in view of the great and extraordinary necessity for this action, to promptly grant further and adequate advances to all the railroads.

No financial move could be more beneficial now than to make our securities so attractive that the funds of the investing world would be irresistibly drawn to this country.

This would be accomplished if the railroads were given full and ample earning power. It would stimulate the whole industrial structure and enhance the values of all other securities. It would benefit every citizen of the United States by creating renewed and profitable activity.

Will you give this matter your earnest attention and will you kindly let us know if you agree and WILL ACT?

If you approve, please ask some of your larger shippers also to write or telegraph to Washington.

. We are, awaiting your reply,

Very truly yours,
(Signed) J. S. BACHE & CO.

While many editors see cause for encouragement in the Commission's decision, a large number of them condemn it in no unmeasured terms as they appear to feel that the Commission not only has failed to give the carriers a square deal but has rendered a decision which will make doubly hard a prompt return to more generally prosperous conditions.

The New York *World*, of Democratic leaning, discusses the decision in the following manner:

No one will ever be able to compute the damage that has resulted to business of all kinds by the delay in reaching this conclusion. Whether reasonably or unreasonably, finance, commerce and industry have been halted or checked for months while the issue has been under consideration. A state of mind is often as demoralizing as a state of facts, and it does not help much, as in the present instance, to say that there is no excuse for the state of mind.

On the score of mental influences the majority of the Commission itself appears to have been as powerfully swayed as anybody else. It has muck-raked the railroads. It has undertaken in one judgment to settle all their troubles and correct all their faults. It has laid down rules and regulations and volunteered advice enough to last for a generation. It has developed the idea that it is specially charged with the introduction of a new science. It has acted all along as though its decision, whatever it might be, was to stand forever.

Efficient public regulation of transportation lines cannot be conducted in this way. The problem which the Commission had to solve was a serious one, but it was overwhelming in its magnitude largely because the Commission refused to meet certain conditions and tendencies squarely in the beginning. It never took the Commission very long to reduce a rate or to suspend an increased rate. The abuses of which it complains have been going one ever since it was organized. Instead of dealing with one question, one system, one section or one commodity at a time it has attempted to create a new heaven and a new earth at a single stroke, with the usual result.

A Commission that is to fix railroad rates ought always to be well enough informed to act promptly. If it makes a mistake, as it is likely to do, no matter how long it discusses the question, it should be able and willing to remedy it on short notice. The Commission has failed in these respects because it is saturated with the spirit of bureaucracy.

The New York *Tribune*, on the other side of the political fence, also takes the occasion to severely criticise the Commission on its decision. Editorially it asserts:

The railroad rate decision, made public yesterday, is an amazing indictment of the Interstate Commerce Commission's intelligence and efficiency. In its pettiness the Commission's judgment is absolutely pitiful. The country would have far greater respect for the majority members if they had stuck boldly to their conviction that the Commission's primary duty is to starve the railroads. That would have been consistent and courageous, though bigoted. But to admit that the railroads really deserve larger returns and then to go through an elaborate performance of giving something with one hand while putting it back with the other convicts the Commission of inability to take its tasks seriously and to do its work in the light of the economic developments of the day.

In the last month the value of many railroad stocks has slumped from 10 to 20 points. On Friday all American stock exchanges closed in order to prevent further depreciation through the unloading here of shares held by foreign investors panic-stricken at the prospect of a general European war. Every intelligent man knows that credit here will be constricted and prosperity will be affected by the withdrawal of billions of capital about to be wasted in war. Every intelligent man knows that the great problem of to-day in the United States is to sustain enterprise and to soften the shock to business of the European conflict.

Yet on the very afternoon when Germany formally declared war against Russia the Interstate Commerce Commission handed down its piddling, petifogging decision giving the long maltreated Eastern railroads the advantage of a 1½ per cent increase in freight rates!

The present Commission has lost touch with actualities. It talks the language of 1908 or 1910, not that of 1914. One of the best things that could happen to this country would be the speedy creation of three or four vacancies in the Commission's membership.

An abstract of the Commission's decision, including the dissenting opinions of Commissioners McChord and Daniels, will be found in another section of this issue.

RAILWAY BUSINESS ASSOCIATION AND THE RATE CASE

Notwithstanding the fact that the Commission's decision is generally considered by railroad officials and the public press, as a severe check upon future railway developments, Colonel George A. Post, the optimistic president of the Railway Business Association, sees in it, by considering only its most favorable possibilities, a certain amount of encouragement for the future. While we cannot wholly concur in Mr. Post's view point, we admire his characteristic optimism, a quality which has made him the popular leader of one of the most aggressive and enterprising collection of business men ever brought together in one organization. In a recently widely circulated published statement, Colonel Post, discusses the Commission's decision in the following manner:

"Disappointment over the denial by the Interstate Commerce Commission of rate advances to the Eastern Trunk Lines in the face of the finding that they need more income, is softened somewhat by the temperate tone of the decision and by several important steps forward which are taken by the Commission in attitude towards the carriers.

"1. **Railway managers are frankly acknowledged to have shown sound judgment when they gave warning in 1908-1910 of an impending decline in net income.** The Commission in 1911 said: "We do not say that the carriers may not increase their income. We trust they may and confidently believe they will.' Three years have passed. The Commission now declares: 'We are of the opinion that the net operating income and the net corporate income of the railroads in official classification territory, taken as a whole, are smaller than is demanded in the interests of both the general public and the railroads'; while they specify with regard to two of the three Eastern systems selected by them in 1911 as 'typical' that 'in 1913 the New York Central Lines, with $49,000,000 greater gross revenues and $159,000,000 additional property investment, earned about $3,000,000 less net corporate income than in 1910,' and the Baltimore & Ohio with $91,500,000 earnings in 1910 and $105,000,000 in 1913, had in 1910 a net corporate income of $16,360,000 and in 1913 of $13,560,000. It would be hard to exaggerate the importance of this tribute to the integrity and far-sightedness of the railway executives. They have been assailed as needlessly alarmed, as insincere and even as juggling figures. Their influence has been injured by such charges. The Commission has given them a clean bill of health in all these particulars. A large part of the railway problem remains to be met and it is most fortunate that in future the railway managers can enter public discussion of railway needs having this high official certificate to their good faith and credibility.

"2. **Railway income in official classification territory is definitely pronounced too low.** This should put an end to another controversy. When the various proposed substitutes for a general advance in rates have been thoroughly tried, if the tendency of income is still such as to repel investment, the air will be cleared for dealing directly with the problem stated by Commissioner Daniels in his dissenting opinion when he says: 'the carriers must make a better showing of net revenue before they can as a whole enlist large additional supplies of capital,'—the problem which 'must be faced, not trifled with.'

"3. **Jurisdiction and obligation to consider railway earnings, income and credit in regulating rates are explicitly assumed by the Commission.** In 1911 this position was approached by the Commission cautiously and with references to the lack of statutory authority to consider earnings in ascertaining reasonableness of rates. In the proceeding just concluded Mr. Brandeis urged that 'the Commission has no power to consider the propriety of the rates taken collectively, except in so far as their reasonableness is determined by general considerations ....its power is limited to the determination, in the case of each rate, whether in and of itself it is just and reasonable.' Meantime the Commission in the Intermountain case had actually made rates wholesale and was upheld therein by the Supreme Court. The Commission, having now recognized the inadequacy of the net corporate income of the roads here concerned, makes this significant pronouncement: 'It is our duty and our purpose to aid, as far as we legally may, in the solution of the problem.' Three years ago solicitude for the financial health of the roads was expressed, but failed of its effect in strengthening credit because not accompanied by action. The present assumption of responsibility for permitting adequate rates is clinched by an actual and immediate grant of some substantial advances. The Commission says with regard to central freight association territory that carriers there ought to have the five per cent 'and possibly more'—the roads being urged to revise the whole rate structure in that region. With five commissioners voting an advance in a part of the territory and two dissenting because it is not given to all the petitioners, and considering that such increases as are sanctioned constitute the largest and most important general advance yet allowed in this country, it is not too much to say that this decision crosses the line into a new era of regulation, in which more than ever before the statements by the railroads of their necessities are given serious and sympathetic consideration.

"4. **To permit suitable rewards for foresight in promotion and efficiency in management is unreservedly declared wise public policy.** It has been urged in opposition to rate advances that profits should be limited. The Commission repudiates this doctrine. 'A carrier,' it says, 'may be entitled to a higher rate for a particular service because the existing rate is unreasonably low, although the carrier may not be in need of additional revenues'; and that 'there should be a liberal return . . . when the property has been wisely planned and honestly constructed and is efficiently managed.'

"5. **Roads of a region are granted advances notwithstanding that some of them have been criticized for their conduct.** Protestants before the Commission have emphasized and a large part of the public has been led to approve the idea that the people in doing business on a line not so criticized should be made to wait for facilities until every road in the territory competing with it on the same rates between common points shall have been purged of all sin. The Commission, while insisting that no road taken by itself shall be rescued from the consequences of wrong-doing at the expense of the rate-payers, ignores lines which are under fire where their neighbors are not.

"6. **Increase of passenger rates, very difficult to effect in the past, obtains the prestige of federal approval.** This will enable certain roads to lay before the Commission if they deem wise interstate rates not complicated with State rates, such as commutation into New York City from New Jersey and Connecticut, into Philadelphia from New Jersey and into Chicago from Indiana and Wisconsin. Immediate sanction for such advances will give the roads a strong backing when, as advised by the Commission, they appeal for higher passenger rates to the Legislatures and Commissions respectively of the States.

"7. **Necessity for proceeding to the immediate solution of income problems without waiting for collateral inquiries is recognized.** 'The practical necessities of the situation,' the Commission says, 'will not permit us to defer action, as suggested by some of the protestants, until our valuation of railway properties shall have been completed.' Commissioner Daniels goes further, expressing the opinion that the 'investigation into possible methods of conserving the revenues of carriers,' 'combined with the determination of the question as to the propriety of the rate advances,' had 'the unfortunate result that a decision upon the matter of approving or disapproving the tariffs filed has been quite unnecessarily delayed.'

"8. **Clear and definite standards are set up by which carriers may hereafter gauge their financial condition and determine whether the showing will be regarded by the Commission as requiring remedies from that body.** After discarding net corporate income as a standard for fixing rates on the ground that over-capitalization of some lines, unduly increasing interest charges, renders that standard defective, the Commission announces: 'We shall use the net operating income' (net earnings minus taxes and rental of facilities, but with interest and leased line rentals still to be paid before reaching dividends and surplus) 'as the product of transportation rates that should be examined in order to determine, so far as we may, the adequacy and tendency of their revenues.' This is to be employed in the form of its ratio to investment—accounts which are conceded to be imperfect, but which are declared to 'afford a usable basis for a fairly satisfactory study of the course and tendency of returns.' Any one who has followed the course of the rate advance litigation as it has groped its way from the pioneering in the 1910 case will agree that the development of a definite standard of railway financial health is a long stride forward and will save the roads large sums in the preparation of regional rate cases as well as substantially increase their chance of winning awards."

SERIOUS DECREASE FOR FISCAL YEAR

A study of the figures recently issued by the Bureau of Railway News and Statistics covering the financial results of railway operations for the fiscal year ending June 30, 1914, discloses conditions of a very unsatisfatcory character and tend to further emphasize the necessity for immediate steps to be taken to further augment the income of the carriers. Not within a decade has the net income of the railways of the United States been so low per mile of line as for the year ending June 30th. When it is further considered that a mile of railway in the United States represents a net investment of over $64,000 in 1914 as against only $52,000 in 1904, the heavy shrinkage in net assumes a startling significance.

A comparison of the gross operating revenues of the railways for 1914 by months with similar figures for a series of years, shows that the increase in revenues culminated in October, 1913, with a total of $301,083,625, almost duplicating the figures for the corresponding month in 1912. From that date, however, there was a steady decline in monthly revenues, so that the year closed with an actual loss of over $79,000,000 in gross. A further analysis shows that during the last eight months of the fiscal year, railway revenues fell off over $109,000,000, compared with the corresponding months of the previous year. Recent results indicate that the carriers, with all their strenuous efforts for greater economy, have been utterly unable to trim their cost of living to their depleted incomes.

How serious is the situation which confronts the carriers, may be judged from recent compilations showing the operating ratio which in February for the Eastern roads was 88.16 per cent, exclusive of taxes, and for the nine months ending March, 1914, 75.81 per cent.

Discussing the significance of these ratios, a recent bulletin of the Bureau of Railway News and Statistics, has the following to say:

> These ratios may be Greek to the general public, but to the initiated they are the gauge by which the health of the railway industry can be judged. Whenever the ratio, including taxes, for the railways of the United States as a whole runs over 70 per cent, there is need for a doctor, just as surely as when the temperature of an individual passes above 99 degrees.
>
> In last year's review it was stated that an average operating ratio of 73.40 per cent for the second half of the fiscal year was unprecedented. The last half of the year 1913-14 registers 75.70 per cent. Translated into absolute funds that difference of 2.30 per cent cost the railways over $70,000,000.

The following figures also prepared by the Bureau of Railway News and Statistics show the fluctuations in net operating income since 1907:

1906-07	227,454	miles	$760,278,000
1907-08	228,164	"	656,418,320
1908-09	233.022	"	742.987.190
1909-10	238.751	"	838.617.000
1910-11	243.229	"	768.303.345
1911-12	246.511	"	751.266.806
1912-13	248.817	"	842.409.336
1913-14	253.230	"	712.133.126

The figures show that the net operating income for 1913-14 is the lowest record in these eight years of railway travail except for the panic year 1907-08. Moreover, the mileage covered in 1914 was 253,230 against only 227,454 miles in 1907, and in the meantime, the net capital investment had increased from $12,920,352,548 in 1907, to $16,351,639,266.

Commenting on the significance of these figures, Slason Thompson, head of the Bureal of Railway News and Statistics, has recently had the following to say:

> There is no need of searching into the byways and dark passages of railway finance to find out what ails the railways. If they are being "looted"—as runs the favorite phrase of their inquisitors—it is by conditions as inexorable in their results as the laws of nature. Between 1907 and 1913 the average freight receipts of the railways was hammered down from 7.59 mills per ton mile to 7.29 mills. These are Commission's figures. That reduction of three-tenths of a mill reduced the railway revenues by a round $90,000,000.
>
> In 1907 the average daily wage of railway employes was $2.20; last year it was $2.49. That little increase of 29 cents a day added over $160,000,000 to the railway pay roll. Put these two items together and you have a quarter of a billion dollars lost in one year over which the railways have no more control than of the wind which bloweth where it listeth.
>
> Take the concrete case of the New Haven road over which the railway baiters gloat. In 1907 its average rate was 1.436 cents per ton mile; in 1913 it was 1.345 cents. That apparently insignificant decrease of 91 thousandths of a cent represented a loss of $2,303,000 on the freight carried in 1913. In 1907 the employes of the New Haven road, exclusive of general officers, worked 11,234,231 days, for which they received $23,754,807 compensation; in 1913 they worked 11,304,980 days (mark the coincidence), and were paid $27,793,112, an increase of $4,038,305 for practically the same days worked. These two items, due to rate reductions on one hand and wage advances on the other, account for a loss of $6,341,305 in the net revenues of the New Haven in 1913, and the proof is easy of access in the archives of the Interstate Commerce Commission.
>
> These reflections are only pertinent because rate reductions are proceeding apace, rate advances are suspended almost invariably, and wage increases, at the point of a strike or arbitration, are acquiesced in, because the railways must not falter in their public service; and there is no knowing what road may next fall under the harrow of a baseless hue-and-cry.
>
> There can be only one permanent remedy for the present intolerable situation. Like Saul on the plains of Damascus, the Interstate Commerce Commission must see a great light and, awakening to its vast responsibilities, cease to persecute the industry it was created to conserve as well as regulate.
>
> It must realize that rate discrimination may be due to unreasonably low rates as well as to unreasonably high rates and rectify the rates accordingly. It must also assume authority to forbid wage advances when it cannot or will not authorize a corresponding increase in rates and fares.
>
> The average of freight rates in the United States to-day is unreasonably low—relatively to rates in other countries it is ridiculously low. On the other hand, the average pay of railway employes is uneconomically high and relatively to freight rates it is ruinously high.
>
> Under government ownership the rates would be raised to a paying level or the wages would be reduced to their economic level. The two are interdeterminative and together constitute the crux of the railway problem.

DEVELOPMENTS IN RAILWAY MAIL PAY LEGISLATION

Since the statement regarding the development in railway mail pay legislation which appeared in July issue of the RAILWAY WORLD, the Moon bill has been amended by the committee so that the maximum rates now named would leave the total payments to the railroads just what they are at present. The maximum rates first named would have cut the total payments at least $3,000,000 below the amount actually appropriated for the current fiscal year.

The amendment referred to was quite widely heralded as a concession to the railroads and a number of newspapers which had recognized the justice of the carriers' contention for more adequate pay for carrying the mails, took occasion to congratulate them upon having obtained at least a part of what they were seeking. This impression was directly traceable to numerous news depatches sent out from Washington in which it was stated, more or less directly, that the amendment would give the railroads $3,000,000 more a year than they were getting at the present time. As the amendment referred to, however, merely restored what the first named maximum rates in the original bill would have taken away, it is readily perceived that the impression of a concession or any additional compensation to be furnished the railroads, was entirely incorrect. The best that can be expected of the amended bill is that it will probably leave the present total payments unchanged. While that would naturally be less unfortunate than to suffer a further reduction, it would be far from satisfactory as may be judged from the fact that the present appropriation allows compensation for probably only about half of the parcel post traffic and that the railroads demonstrated before the Joint Congressional Committee on Railway Mail Pay that they were underpaid more than $15,000,000 per year before the parcel post service started.

The weighing of the mails in two out of the four weighing sections of the country, since the parcel post was inaugurated, indicated over $4,000,000 additional pay due in each section by reason of the parcel post. It is a fair presumption that in the other two sections there is still a total loss of approximately $8,000,000 per year on this account, which will not be corrected until the mails are weighed in those sections.

The current appropriations, therefore, fail to provide for probably about $8,000,000 worth of parcel post service which is being performed by the railroads without pay. This, with the $3,000,000 additional cut of the Moon bill in its first form would have effected, gave the carriers an estimated loss of $11,000,000 per year which the passage of this bill would have caused, without taking into consideration the previously existing underpayment of over $15,000,000 per year.

The amendment, of course, betters to the extent of $3,000,000 per year the situation which the enactment of this would create, assuming that in practice the maximum rates would be accorded in every instance. But this sum is only a small part of the total underpayment that the measure would establish upon a definite statutory basis. Furthermore, the Moon bill makes the carrying of the mails compulsory, under penalty of $5,000 for each refusal. At present, the railroads are theoretically free to decline the service and this has no doubt been some protection against substantially confiscatory practices.

As a matter of fact the railroads have no apparent justification for assuming that, in practice, the maximum rates of the Moon bill would be allowed. Under the wide discretion the measure would confer on the Postmaster General, that official would allow as much less than the maximum rates as he chose, so that the actual reduction the railroads might suffer under this proposed law is entirely conjectural.

Furthermore, many illustrations are being constantly offered of the grave injustice under which the carriers are daily laboring due to present regulations.

Under these laws the Santa Fe recently received the generous sum of $2.50 for loading 11,000 pounds of condensed milk into one of its cars at Deming, New Mexico, the use of a goodly portion of a car en route, and transporting this milk to Silver City, New Mexico, a distance of fifty miles, unloading it and transferring it by wagons from the depot to the post office at Silver City.

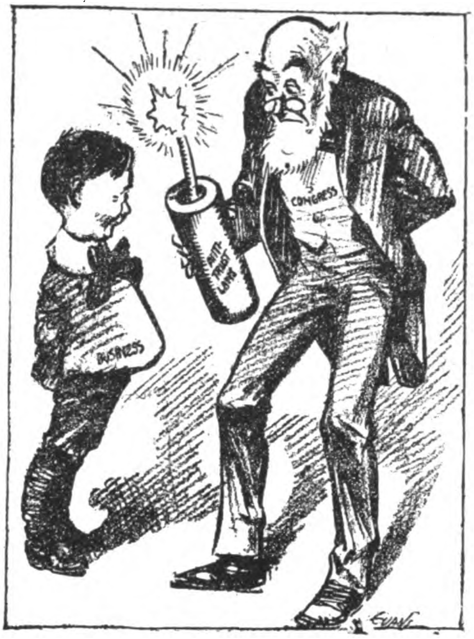
The parcel post rate on a 45-pound article from Deming to Silver City is 49 cents, so, on a shipment of 11,000 pounds between these two cities, the Post Office Department received $120.00, out of which it paid the railroad $2.50 for the great bulk of the service. Thus, the United States Government compelled one of the greatest factors in the welfare of the country, to work for it for virtually nothing. If this is not robbery, pure and simple, we should like to be informed under which head the Post Office Department classifies it.

GENERAL CONDITIONS

Predictions regarding the future, under existing conditions, are of course little more than worthless. Our international trade has been practically suspended and upon its reasonably prompt resumption will depend, in no small measure, the full return of trade and industrial activities of this country. Up to the time war broke out, while conditions were far from favorable, improvements were being noted in certain directions and the hope of a bumper grain crop held in it the possibilities of a greater business expansion with its resultant prosperity. The decision of the Interstate Commerce Commission in the five per cent rate increase case, disappointing as it proved to be, also might be said to hold out at least a small measure of encouragement to the struggling roads.

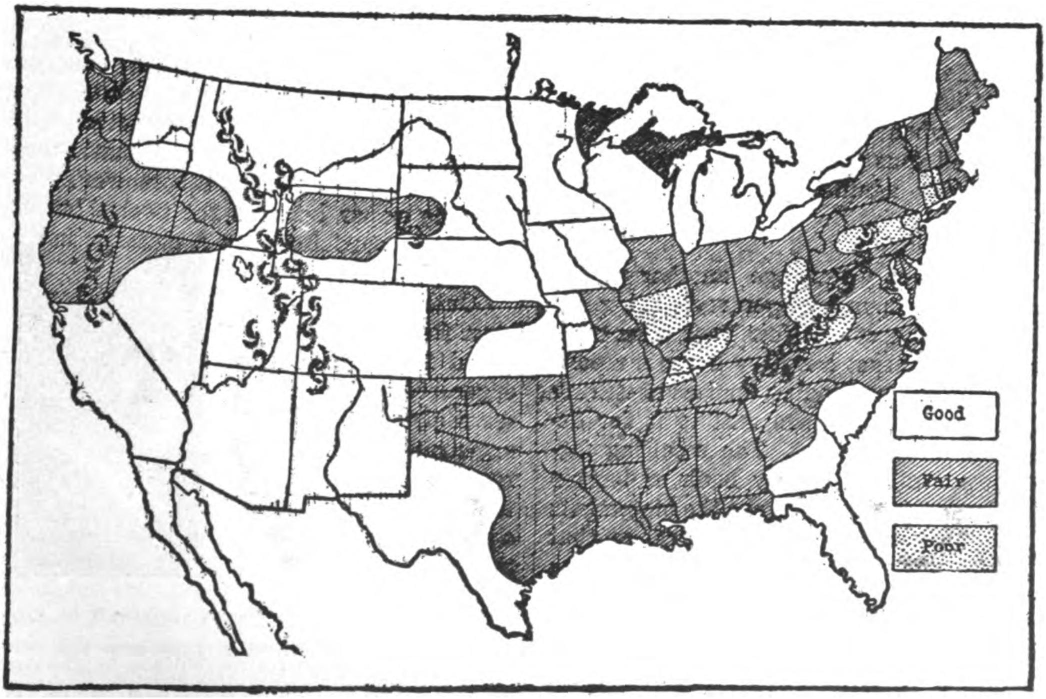
All these tendencies, however, have been swallowed up in the greater influence of a European war and the question now in the heart of the business world is not how large will our crops be or how soon will the railways be able to place themselves on a more favorable footing, but when will the war be over in order that we may resume our normal activities? All ordinary barometers fail in the time of war and so the country stands to-day, firm in the belief of its ability to weather the storm, but extremely conservative regarding its present or future activities.

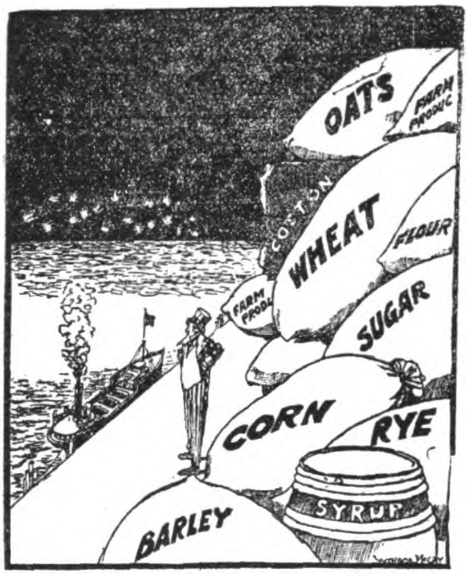
PSYCHOLOGICALLY SAFE AND SANE



CONGRESS.—Don't be afraid, Sonny. It won't hurt you.—(From *Baltimore American.*)

Fundamental Business Conditions





MILLIONS IN CROPS; NO SHIPS TO MARKET THEM!

(From *New York American.*)

It is of interest to note, however, the general condition of the country just previous to the beginning of the great European conflagration, and perhaps no better index is offered than the results of an investigation recently concluded by the United States Chamber of Commerce, the outlines of which are graphically portrayed by the accompanying map. This investigation shows the manufacturing industry to be exceedingly quiet throughout the entire ocuntry. Mining of nearly all kinds was suffering from strikes and lack of demand, lumber interests were feeling the dearth of building especially in small towns and in the country and the railroads, because of decreasing revenues and increasing expenses, had cut down their forces so far as possible and laid off many trains in the interest of economy.

Against these unfavorable conditions, however, the investigation disclosed the fact that the situation of agriculture was most encouraging despite drought conditions prevailing more or less extensively in widespread sections. While spring wheat and corn developments have been of a rather discouraging character recently, it is believed that the winter wheat crop will unquestionably be a record breaker and will probably not be less than 650,000,000 bushels. Other crops aside from grain indicate conditions above the average, while in the South, the cotton crops have shown remarkable improvement and more than an average crop is confidently anticipated. In other words, agriculture stands ready to deliver a wealth of products, which, under normal conditions, could not have failed to stimulate both commerce and industry. Under existing conditions, however, no one can measure its effect, as the usual channels of trade are closed and the country must wait to learn what disposition it can make of its resources before it can form any estimate as to what the results may be.

THREATENED RAILWAY STRIKE AVERTED

The threatened strike of Western locomotive engineers and firemen has again been averted, for the time being, by the familiar device of a pretended arbitration. The principal demands of the men, as usual, are for more wages in all classes of service, a shortening of regular time, with a corresponding increase in overtime, and an increase in the rate of pay for the latter, more allowances for preparation time and terminal delays and an arbitrary demand for the employment of two firemen on large coal burning en-

MEN WHO WILL TAKE PROMINENT PART IN THE WESTERN WAGE CONTROVERSY.

Reading left to right they are: Warren S. Stone, head of the Brothrhood of Locomotive Engineers; G. W. Hanger, member of the Arbitration Board; Hon. Martin A. Knapp; Hon. William L. Chambers, Chairman of the Board; and W. S. Carter, President of the Brotherhood of Locomotive Firemen.

gines regardless of the character or length of the run, the tonnage haul, or the work required of the firemen.

These demands could scarcely have been made at a less opportune time. Railway labor is thoroughly familiar with the fact that the carriers are passing through one of the most depressing periods of their history and are not only unable to pay any increases in wages, but many of them are finding it extremely difficult to keep their properties out of the hands of receivers. These considerations, however, have evidently not been given the scantiest consideration by the men, whose demands simply represent the latest development in the now familiar cycle of wage-extortion.

The men, at first, were extremely arbitrary in their attitude, and efforts by the Mediation Board, to have the matter mediated or arbitrated, were met with a peremptory refusal. Public temper expressed itself so forcibly, however, that labor leaders saw the wisdom of a compromise and gave a reluctant consent to the employment of arbitration.

The managers of the roads were and are opposed to the general manner in which these arbitration proceedings are conducted. They contend, and with the best of reasons, that the men are willing to arbitrate only one side of the questions at issue, and that the proceedings, in effect, bar them from proposing any sort of counter-claims against those which would be advanced in behalf of the men. If the roads can not be heard in arbitration on the claims made by them during their negotiations with their men, such arbitration degenerates into the merest farce, and so far as the railways are concerned, amounts to "heads you win and tails I lose." Even in the event of an unexpected result in which the men would fail to procure no award of increase, what guarantee is there that the men would go on as before? As a matter of fact, the utmost they venture on the proceeding is that they will not strike now, but may at some later date.

Notwithstanding the unfair conditions under which these labor controversies are now arbitrated, the Western managers, upon a personal appeal made by President Wilson to place patriotism above property interests, have consented much against their better judgment, to arbitrate the demands involved with the 55,000 enginemen and firemen and thus prevent what threatened to be one of the most extensive transportation strikes the country has ever witnesesd.

The railroad managers consented to present the case for settlement in a way already approved by the employes and the Federal Board of Mediation, to avert what the President characterized as a "national disaster," although they realized, and President Wilson pointed out, that all the merits of their side could not be taken into consideration.

Chairman Chambers, of the Board of Mediation, at once began preparations for bringing the dispute to arbitration but in view of the one-sided developments, the managers felt called upon to issue the following statement:

> "The controversy between the Western railroads and their enginemen finally narrowed to a single issue, namely: Can these railroads be heard in arbitration on the claims made by them during their negotiations with their men?
>
> "To avoid all possibility that under an arbitration award a reduction in pay might be forced upon the men, the railroads proposed that the arbitration agreement should give to the men on each road the right to elect, after a complete schedule was awarded by arbitrators, either to adopt the schedule thus awarded or to continue their prior schedules.
>
> "The railroads felt that their plain duty required them to insist upon a plan of arbitration which would recognize their right to be heard upon the claims on their behalf which were regularly presented and discussed with the men during their negotiations; but in response to the request of the President on July 29th, that both sides confer with him before final adverse decision by either side, the committee of managers came to Washington with open minds prepared to co-operate with the President and to make whatever contribution to a peaceful settlement of the controversy was demanded by our duty to the public and was consistent with the preservation of our rights.
>
> "At our conference with the President on Saturday, and again in his letter to us on Sunday, the President strongly urged that in view of world-wide conditions the situation had reached a crisis in which patriotism and a regard for public welfare were paramount to all other considerations, even to the sacrifice of what, in ordinary circumstances, might properly be insisted upon as a right. The railroads have responded to this appeal by accepting the plan of arbitration proposed by the mediators, which provides that no claims other than those of the employes as originally presented shall be submitted to arbitration, and which plan, in the judgment of the President, offered the only means under the existing circumstances of averting what might prove to be a disastrous strike."

The President's letter of appeal to the railway managers which brought about their agreement to accept the plan of arbitration as proposed by the Mediation Board, was as follows:

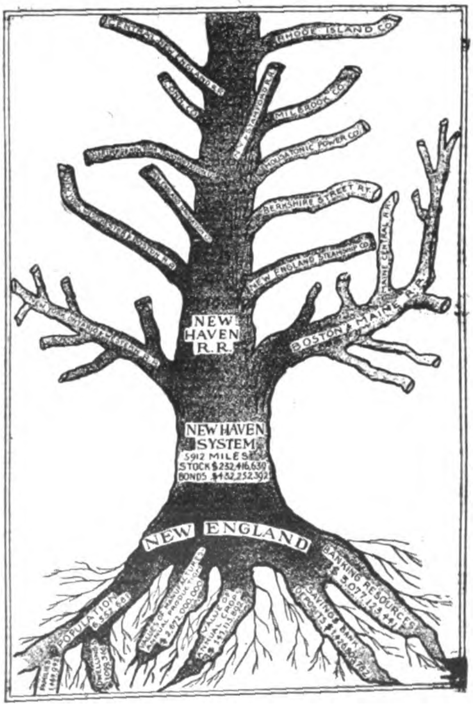
> "In view of world-wide conditions, unparalleled in recent history, which have arisen with-

in the last few days, it is obvious that the suspension of business on roads serving more than half the territory of the United States would be a calamity of incalculable magnitude. The situation has reached a crisis which hardly permits a full consideration of the merits of the controversy and I feel that in the circumstances I can appeal with confidence to your patriotism and to your regard for the public welfare to make whatever sacrifice is necessary to avert a national disaster."

The reply of the managers said:

"Under any ordinary circumstances we should feel that our plain duty to the interests committed to our charge would not merely justify but would require us to insist upon a plan of arbitration that would recognize our right to be heard upon claims regularly presented on our behalf. But we also appreciate keenly, as you have pointed out, that an unparalleled condition has arisen which hardly permits a full consideration of the merits of our case and which constrains you to ask us to waive any discussion of merits and accept the plan of arbitration proposed by the mediators which we feel convinced offers under the existing circumstances the only way of avoiding a disastrous strike upon all the railroads of the Western half of the United States.

"In view, therefore, of the situation as you have presented it and of your appeal to our patriotism and to our regard for the public welfare, we beg to express to you herewith our acceptance of the plan of arbitration proposed."


CENTRAL NEW ENGLAND R.R.
RHODE ISLAND CO.
N.Y. & STAMFORD R.R.
MILLBROOK CO.
HOUSATONIC POWER CO.
BERKSHIRE STREET RY.
NEW ENGLAND STEAMSHIP CO.
MAINE CENTRAL R.R.
BOSTON & MAINE R.R.
NEW HAVEN R.R.
NEW HAVEN SYSTEM
5912 MILES
STOCK $232,416,630
BONDS $432,252,392
NEW ENGLAND
POPULATION 6,552,681
VALUES OF MANUFACTURES ANNUAL PRODUCTION $2,672,000,000
VALUE OF ANNUAL CROP
SAVINGS BANK DEPOSITS
BANKING RESOURCES $5,077,123,491

The Tree Which It Was Proposed to Fell.

(From New York Annalist)

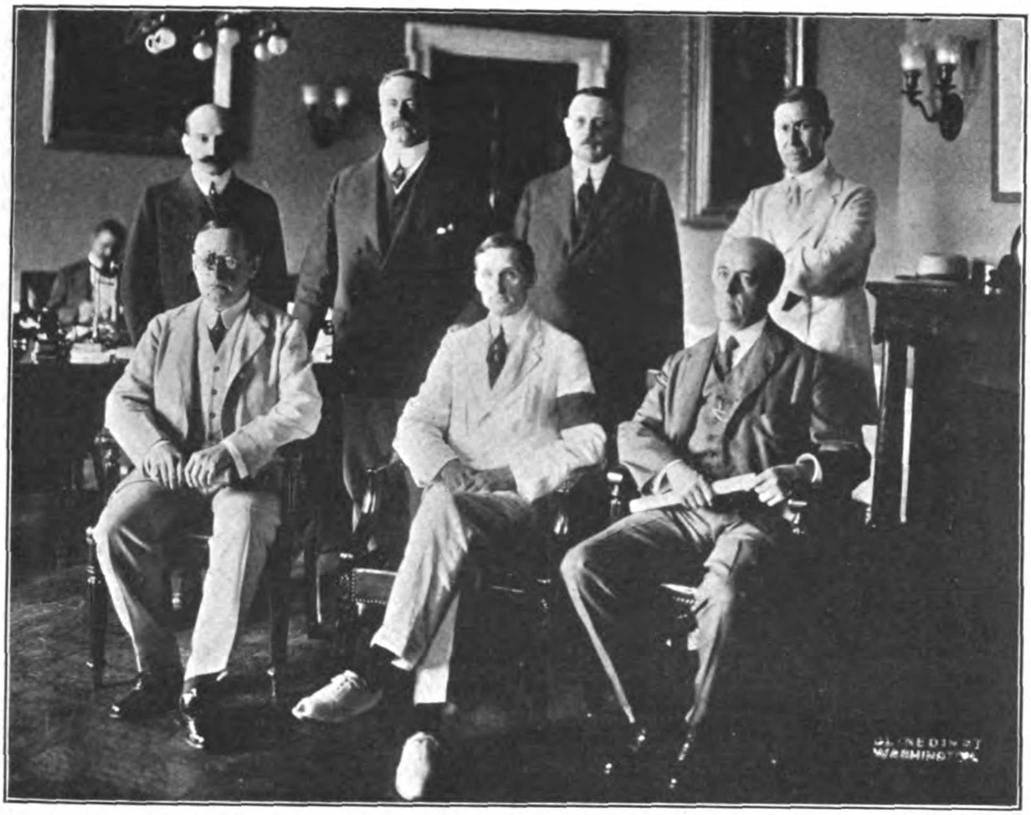
SUIT AGAINST NEW HAVEN WITHDRAWN

The Attorney-General of the United States, has taken a wise course in agreeing to the plan of the dissolution of the New Haven system as worked out by its board of directors; and also in agreeing to withdraw the civil suit in return for a promise made by the New Haven that it would make every effort to sell its Boston and Maine shares within a year and if a suitable sale cannot be made within that time, to request a further extension from the courts. Before the expiration of this period the Massachusetts court will again convene, and, it is hoped, will be more amenable to the company's efforts to persuade it to remove the oppressive conditions of sale to which such strong objection has been raised. This compromise, in effect, amounts to a virtual surrender of the position of the Government, and by its terms the New Haven is to be allowed to retain the New York and New England road by which it has reached its Ontario and Western lines and made connections with Pennsylvania.

This ray of sunshine, the first which has hit the New Haven system for many months, should prove a source of considerable encouragement to those New Haven officials who are now working so heroically and sincerely to rehabilitate the property. Evidently the Attorney-General has come to the conclusion that nothing can be gained by standing out for his original contention and that the property would be likely to be still further depreciated in value by dragging it through the courts. We believe the Attorney-General and the New England States will find that the New Haven will respond to a more friendly treatment in a manner highly beneficial to all concerned. The New Haven still constitutes one of the finest railway systems in the country and those now in charge are fully able to develop its latent possibilities for the good of the community to their fullest extent, providing they receive the encouragement from regulative authorities to which their efforts are entitled.

THE FEDERAL RESERVE BOARD

President Wilson has completed his nominations for the membership of the Federal Reserve Board and railway officials will note with pride that the President has appointed Frederic



THE FEDERAL RESERVE BOARD.

Seated from left to right are Charles S. Hamlin Governor; W. G. McAdoo, Secretary of the Treasury; F. A. Delano, Vice-Governor. Standing left to right: Paul M. Warburg, John Skelton Williams, Comptroller of the Currency; W. P. G. Harding and Adolf C. Miller.

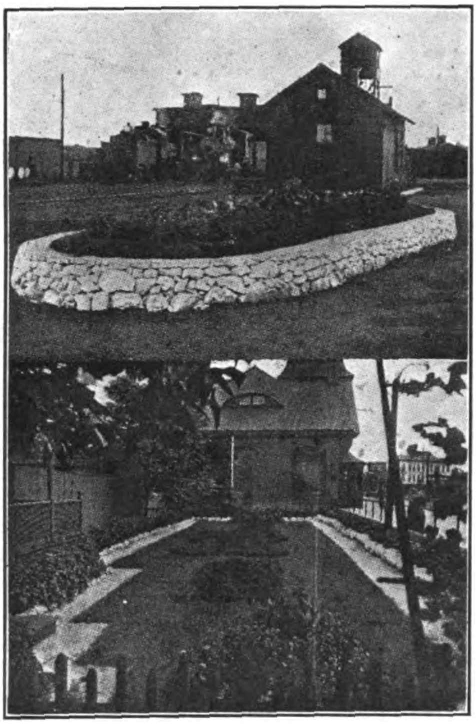
A. Delano to take the place of Thomas D. Jones, of Chicago, whose name was withdrawn some time ago. Mr. Delano and Paul M. Warburg, John Skelton Williams, W. P. President, have both been confirmed by the Senate so that the Board is complete and consists of the following members:

Charles S. Hamlin, Governor; F. A. Delano, vice-governor; W. G. McAdoo, Paul M. Warburg, the last two nominees of the G. Harding and Adolf C. Miller.

Mr. Delano, who, at the time of his appointment, was president of the Chicago, Indianapolis and Louisville Railway Company, is eminently fitted to fill the position to which the President has called him. He was born in Hong Kong, China, in 1863, but spent most of his boyhood days in Newburg, New York. He graduated from Harvard in 1885, with an A. B. degree and started his railway service in the same year with an engineering party of the Chicago, Burlington and Quincy and in 1890 became superintendent of freight terminals for the same road at Chicago and in the following year superintendent of motive power. From 1901 to 1005, he was general manager of the Burlington, subsequently becoming consulting engineer of the War Department in respect to Philippine railroads, and later president of the Wheeling and Lake Erie Railroad. President Taft named him a member of the Commission on Industrial Relations in 1912, and he was renominated for this Commission by President Wilson. During the past few years, Mr. Delano has been largely engaged in the development of financial and reorganizing plans of various Western roads and his activities have given him a broad experience in financial matters which will prove of practical value to him in his new work.

BEAUTIFYING RAILWAY STATIONS

An effort which has gained in popularity during the past few years, but which has recently been more or less restricted owing to the hard times confronting the carriers, has been the



Examples of Garden and Parking Developments on Frisco Lines, at Pittsburg, Kansas, and at Ft. Scott, Kansas.

beautifying of the grounds surrounding railway stations along the various rights-of-way. Considerable ingenuity has been expressed in the development of garden and parking schemes and a number of important railroads have, from time to time, offered prizes for the most successful efforts in this direction.

Not so much has been heard about these efforts within the past two or three years, but it is unfortunate that they should not have been continued and increased. Passengers are not unappreciative of well-kept and artistic station grounds and undoubtedly they give the railroad an air of refinement and prosperity which should prove no unimportant influence in stimulating passenger travel. The following photographs, which, in the first instance, shows the mechanical department grounds and facilities of the Frisco Lines at Pittsburg, Kans., and in the second the transportation department park of the St. Louis division of the same road at Fort Scott, Kans., are good examples of what may be done in developing attractive environments and, with a more liberal treatment of the railroads, it is to be hoped that these beauty spots may eventually be found along the right-of-way of every important system.

A COMPARISON OF RAILWAY RETURNS FAVORS EUROPEAN ROADS

Although railroads of the United States added a far smaller amount to capital per mile between 1910 and 1912 than any of the three principal railroad countries of Europe, so great was the burden of increased expenses on revenues that they totally failed to keep abreast of the foreign systems in return on the investment. This, as shown by the Bureau of Railway News and Statistics in its annual comparison of returns on United States railways with those of England, France and Germany, is in spite of the fact that our own railways made by far the largest increase, both actual and relative, in operated mileage.

In the two years ended with 1912, for which comparisons for all four countries are now possible, United States railways added 3.7 per cent to mileage on an addition of 5.2 per cent to capital. In contrast to this showing, Germany's Government roads added 6.4 per cent to capital to make an addition of only 2.5 per cent to mileage, while France, to expand by but 0.9 per cent in mileage, added 4.5 per cent to capital, and England, adding only 0.4 per cent to mileage, expanded capital 1.5 per cent.

The effect of this economical outlay of new capital on American roads is shown partly in the per mile comparisons. United States railways in 1912 were capitalized only 1.4 per cent higher per mile than in 1910, while German roads were 3.9 per cent higher, and French railways were 3.4 per cent higher. Though English roads show a smaller relative increase per mile than our own, this is because their capital per mile already is so excessively high, their 1.1 per cent representing more than three times our own 1.4 per cent in actual figures.

It is in the absolute increase of per mile capital, however, that the moderation of American capitalization becomes most apparent, for while the United States in the two years was adding a paltry $878 per mile, England was adding $2,784, Germany $4,245, and France almost $4,500 per mile.

Yet with all the advantage of moderate capitalization United States railways were so pressed between the millstones of sluggish revenue and rising expenses (spending 8.2 per cent more to do 3.3 per cent more business), that ratio of net to investment was 10.8 per cent smaller in 1912 than in 1910 (while with taxes included the loss is 12.5 per cent), Germany despite its excessive capital expenditure aided by gigantic increases in traffic and rates rigidly maintained in the face of public demands for reductions, displayed a ratio of income to capital 10.3 per cent larger in 1912 than in 1910. England's ratio fell 1.1 per cent, while that for France declined 3.7 per cent.

The percentages of increase in the various countries between 1910 and 1912 follow:

	England	France	Germany	U. S.
Length	0.4	0.9	2.5	3.7
Capital	1.5	4.5	6.4	5.2
Capital per mile	1.1	3.4	3.9	1.4
Revenues	3.9	9.0	15.0	3.3
Expenses	6.4	15.0	13.3	8.2
Net	-0.4	0.7	17.0	-6.2
Ratio to capital	-1.1	-3.7	10.3	-10.8

In the 15 per cent revenue increase on German railways is seen one of the most powerful reasons for the apparent success of the Government roads for although expenses to do the business rose 13.3 per cent, net was expanded by 17 per cent. In France, owing to lavish expenditures following nationalization of the Western Railway and laws requiring establishment of pensions, expenses rose 15 per cent against a 9 per cent gain in revenues, leaving net almost at a standstill.

In England, where a rise of 3.9 per cent in revenues was more than eaten up by a 6.4 per cent rise in expenses, the difficulty has been met partially by increases already awarded in freight and passenger rates.

For the United States an 8.2 per cent rise in expenses to do 3.3 per cent more business, rate reductions continuing and no prospect for adequate recompense in higher charges, is in sharp contrast to the prosperous showing for the Government roads of Germany, where expenses properly chargeable to operation are charged continually to new capital, and where in the face of enormous traffic expansion the minister of public works year by year stoutly resists public demands for reduction of what are pronounced excessive rates.

The Value of Courtesy.

(From the "Frisco-Man.")

SAY, this thing of being a grouch is a frost. There's nothing in it.

Keep it up and the first thing you know your draw bar comes out while you are pulling up a hill and you land at the bottom—Junk.

Put on the soft pedal and apply the air to this old rough and ready stuff. It don't get you any further than a dead engine.

I know some fellers think it a sign of feebleness to say "please," but believe me, I've found that little word good for anything from a hot axle to a mad "super."

Then, this thing of bawlin' out a man so that everybody in the roundhouse knows that you think he is all of the fifty-seven varieties of idiots, should go to the discard. I've found a heart-to-heart talk, sorter soft and low, went further and did more good than all the finest oratorical cussin' over a lengthy period and longer distance ever did get me.

Of course, we all get spells when the mad wells up into our systems until our collar button creaks. But the other fellow can get just as mad and we are a tie with nothin' doin' but a lot of humid conversation. It's a lot better to get him off into an unused corner and go at him something like this:

"Bill, you've got lots of good points and I know you are trying to do the best you can, but you are a little out of line and I want you to help get it right."

Bill swells up and says, "Sure," and you have turned up jack.

Then, there's the ignorant public. It's astonishing how little they know. You catch yourself wondering how they make a living anyhow.

This reminds me of Tom Shelton, who was a brakeman on a passenger run. An old lady asked him if the Ozark Uplift was north or west of where they was.

Tom took off his hat, and turned all the way round until he faced her, and said:

"Lady, durned if I know."

Tom didn't know it all, even though he had railroaded for thirty years. So we've just got to remember that the public that asks a lot of questions are trying to learn something worth knowing, and it should be our pleasure to help them along.

If one thing more than another gives me the original pip, it is these Smart Alecks who feel called upon to josh every one that wastes their time talking to them.

This kind of cattle finally wind up wonderin' why it is they can count their friends on the first joint of the index finger of their left hand.

Sure, they enjoy their wit, and maybe some other sap head grins, too, but the shudderin' victim remembers it longer than any one else, only different, and when his turn comes, which it generally does, the wit is walking slow, far behind his job.

Then there's the poor fellow that wants to be nice and polite and is playing the wrong system.

He don't know that kind words and dulcet tones are the panhandler friends. He reels off a line of talk with his eyes fixed upon the whole round world and hears nothin' except his conversation, or he uses the counter for an Ostermoor and rests a larger portion of his weary bulk thereon.

It all comes to this. You've got to be attentive, listen carefully to what the other fellow says, cut out the slouch and give a real and timely smile occasionally and then you'll be pretty close to the genuine article.

If you haven't really got it, a little practice will get it.

Contemporary Opinion

The Safety First Movement.

(From the "Scientific American.")

WHATEVER may have been the sins of the great American trusts, a blind and cruel disregard of the physical welfare of their employes was not one of them. To be sure, there have been instances of long hours and arduous labor; but the men who had imagination enough to create corporations capitalized at half a billion dollars and more had also imagination enough to see the business folly of endangering life or of working a man to the point of exhaustion. Taken as a whole, accident prevention and welfare work have been more developed by our great industrial companies than by smaller manufacturers. Indeed, were it not for the salutary laws that have been passed in most States to check the frightful loss of life and limb that has hitherto marked the course of our industrial expansion, it is probable that those merciful provisions which stand not only for humanity, but also for good business, would still be confined to the trusts.

The history of the Safety First Movement in America is in that respect a duplicate of the history of the movement abroad. Long before the social democrats insisted upon the passing of those stringent accident prevention laws, for which Germany is famous the world over, the larger German manufacturing companies had instituted accident prevention and welfare systems that testified to their humanitarian instincts and their good business sense. Systematic accident prevention is at least fifty years old in Germany; in the United States hardly fifteen years old. While we can hardly boast that we have approached the high standard set by Germany, still the record which we have to show for our fifteen years is creditable indeed.

But much more remains to be done—how much can be gleaned by examining statistics. From a chart which was exhibited by the Prudential Insurance Company of America at the recent International Exposition of Safety and Sanitation, it would follow that there are 25,000 fatal industrial accidents per annum in the United States, and some 300,000 injuries. The mere possibility of being able to state in statistics the approximate number of our industrial casualties is a step in advance; for as late as 1908 it was impossible to estimate with any accuracy at all what was the toll we paid in crushed limbs and snuffed-out lives. Now at least we know how vast is the problem to be solved, how much needless suffering we inflict and how much we lose in dollars and cents, because we have hitherto failed to realize the necessity of guarding men as well as machines.

It has been estimated that it costs about $300 to train a skilled workman to perform a new task, and that ultimately he represents an investment of about $2,000 to his employer. Considering the subject of accident prevention from this cold-blooded standpoint, our business policy has not been all too wise.

Now that there is an awakening of employers to the duty which they must exercise, now that employers' liability statutes have done away with the antiquated common law conception of negligence, we may watch for a very marked improvement in deaths and injuries.

As an example of the splendid work which the large corporations are doing in the education of their employes, we may instance the Pennsylvania and New York Central Railways and the United States Steel Corporation. The work of the steel company is particularly difficult because it is dealing with employes who come from half a dozen different countries and who speak not one word of English. Railroad companies have their problems, too, because they are dealing with the most ponderous and, at the same time, the most swiftly moving machinery that we know.

It would be hard to estimate with any degree of accuracy how much money is annually spent in driving home the Safety First principle; but it must run well up near a million dollars, if we take into consideration what the larger companies spend in issuing educational pamphlets, in employing lecturers, in installing safety guards in machine shops, and in maintaining splendidly equipped emergency hospitals. That it pays to do this is evident from the figures published by the Pennsylvania Railroad. Surely, the reduction of serious accidents to the shop employes of that company alone from five to seventy per cent is magnificent.

Some Truths Gleaned from a Busy Life.

(By William J. Barker in the "Rio Grande Service Gazette.")

IT does not cost anything to be civil at all times, and many times civility brings back a return that means a lot in dollars and cents.

Make up your mind to get along with people in your business life, no matter how much of a task is may be at times.

The man who comes out boldly asserting that his knowledge is superior to that of someone else will never be taken at his word. Let the other fellow tell about your superiority. If it is worth telling, it will soon go the rounds.

Loyalty is three-fourths of the battle.

Be faithful to whatever interests you. It is one of the best traits in man, and, as he grows older, develops into one of his greatest assets.

Sometimes a man will feel himself becoming indifferent to his employer and to his work. That is just the time for him to find another employer, because he is no good where he is, and he is wasting his own and his employer's time.

There is no use being anything but natural. A bluffer is rarely accepted at his face value. No sane man should try to pretend he is something he is not.

There is nothing in being too independent. No matter how high a man goes in business life, he is, to a great extent, dependent on others.

One of the greatest guides in going through business life, and one that will point you right always, is self-control. It is pretty hard work to swallow your pride at times, but most times everything is all right—in fact, better—after you have swallowed it.

Watching the clock will not get a man anywhere. Hard work and the average amount of common sense will shove you along quicker than anything else.

Doing things in a limpy, listless way is not really doing them. Things are only done well when there is plenty of heart behind the effort.

In every game of sport there is a penalty prescribed for every kind of foul. Every man who has been in business many years will tell you it pays to play fair in all dealings.

Play a little every day, if it's only a good laugh or enjoying a good story at luncheon with some of your friends. It holds the capacity for play in good condition and keeps a man in better shape for work.

Ought We to Help?

(By an Employe of the Frisco Lines.)

SHOULD we not, in the interest of the company which employs us, whose interests after all are our interests, cast our votes for the man or men, who will not continually introduce bills, or help pass them, that will be detrimental to the railroads?

If you or I were conducting a business of our own, would we not expect our employes to work for our interests along business lines, and would this not be proper? Therefore, would it be right for our employes to cast their votes for a man, or class of men, who they knew would legislate against our interests?

We are, year after year, asking for higher wages, better working conditions, etc., and have in the past received them, but can you or I expect things to work for our welfare in the future, as they have in the past, if we do not lend a helping hand, I mean by our vote?

The men we send, or help to send to Congress, make the laws by which we are governed and which we work under. It is these men we help to elect who pass laws reducing rates and causing loss to our company, and in the end loss to ourselves.

Study this over, fellow workers, and interview the men who are asking for your support in the coming election with a view to determining how they stand on the question.

Ought we to help?

Ships versus Railroads.

(From the "Southern Pacific Bulletin.")

"CAN you tell me," asks Chairman Hemans, of the Michigan Railroad Commission, "why we get so excited when we hear that the government is going to do something for American ships, and why on the other hand we seem to care so little about anything for American railroads? Some of us are deeply perturbed because American ships may have to pay tolls for carrying freight through the Panama Canal; but none of us are clamoring for the purpose of a free right of way, for instance, for any American railroad that carries freight. We cheerfully spend millions of dollars on the Lime Kiln crossing and the Livingstone Channel to promote shipping on the great lakes, and many more millions for locks at Sault Ste. Marie. And we take pictures of these waterways improvements and put them on postcards which we proudly send to our friends. But I wonder what would happen to the statesman who would suggest that we appropriate funds from the public treasury to break down heavy grades on some of our railroads so that they could haul freight at less expense. As far as public aid is concerned, I can see no difference between the man who invests in ships and the man who invests in railroads."

Can we possibly find the answer to Mr. Heman's conundrum in the fact that the improvement of inland waterways is paid for out of federal coffers, which are far enough away to seem cheap, and filled largely through indirect taxation? We are quick enough to complain about any local government officer who seems to be in any way responsible for an increase in the local tax rate, but we usually applaud the congressman who helps to open the pork barrel and "get something for his district."

The Human Railroad.

(By Elbert Hubbard in the "New York American.")

HISTORY is mostly a record of fights. Business is a record of boosts.

Business builds, constructs, enlarges, bridges the rivers, tunnels the mountains. Business sets people to work and pays them what they are worth.

The big railroad man takes out the seventy pound steel and puts in one hundred; he creosotes the ties, paints the station, replaces wooden platforms with brick pavements, tears down old structures and builds better, replaces wood with steel, and steel with concrete; replaces dirt with cinders, and cinders with stone ballast.

He gives opportunity to the laborer, encourages genius, helps initiative, joins hands with the inventor, co-operates with the farmers, works for better schools, for school gardens, for playgrounds, good roads, concrete sidewalks, removes the rubbish, plants trees, shrubbery, flowers, waters the waste places, drains the swamps, knows what the factory men and the business men are all doing along the line; gets in touch with them, clasps hands with them, eats with them, laughs with them, talks with them, advises with them, knows their wants and sympathizes with them in their problems; settles contentions, and settles them rightly.

The railroad is a citizen of every town, city, village or township through which it passes.

It is a taxpayer, and it is interested in everything that makes for human happiness and betterment. Nothing that is human is alien to it. Treat it well.

The Main Chance.

(From the Grand Rapids, Mich., "Herald.")

WHO says "there's no chance" for the boy "without a pull"?

In the greater Pennsylvania Railroad System there is a corps of 170 ranking officers—BIG men in BIG jobs. Out of this 170, 163 (including the President) started at the bottom. Not NEAR "the bottom." AT "the bottom." Some of them were office boys. Some of them were water boys. Some of them were section hands. Some of them were janitors. ALL of them—163 out of 170—started in with the Pennsylvania in the most ordinary and commonest kind of labor.

Genius and Loyalty and capacity and preparedness are their own blessed reward. A thought worth remembering just now when school and college are contributing their fresh young blood to the commerce of America!

Meanwhile, ANOTHER thing! Out of this corps of 170 ranking officers in one of the greatest railroad systems in the world, 142 have been in the service over twenty years.

It pays to STICK!

A rolling stone gathers no moss. Wandering time servers never "arrive."

Some "Don'ts" for Officials.

MANY railroads have sent broadcast among their employes long lists of "Don'ts" for their guidance, but here is a completed list of "don'ts" for the officers which are being scattered among the officials of the Missouri Pacific as well as a number of other railroads, which are applicable not only to railway officials but to all who happen to fall into a little bit of authority. They were compiled by C. H. Carson, superintendent of the Ft. Dodge, Des Moines & Southern road:

"Don't nag. Many a good man has been nagged into inefficiency. Don't humiliate a man by advertising his shortcomings from the housetops, but quietly point them out to him. He will lose an arm for you, if necessary. Don't treat your men as if they belonged to a kindergarten class. Chances are they are better posted than you are. Don't be afraid to compliment an employe for some commendable service. He is made of precisely the same kind of stuff you are.

Don't forget that the subordinate has as much gray matter as you have. Don't forget that where some of your men are making mistakes that cost dollars, you, by pursuing a mistaken idea and policy, may be costing the company thousands. Don't forget that a man who is made out of the right kind of material will resent a brutal call-down, and you should not complain if he knocks you down. Don't forget that a man who will stand for a 'cussing' because of some mistake or oversight is not the man to help your administration. He should be fired. Don't forget that a whole industrial world has changed since you had your ear close to the earth and that what might have been done 25 years ago, would be impossible now. Don't forget that while you are checking everybody else up it might be a good idea for the company you represent to make a careful inventory of yourself. You might be 25 years behind the times."

In Lighter Vein.

(From the "Chicago Traffic Bulletin.")

Adirondacks, July 24, 1914.

Dear Tom:

Me for Geology every time! It doesn't split any infinitives with me whether hard headed, practical, tired business men believe in science or not—for these guys who depressed the earth to make oceans when the clouds came down, and weakened the outer casing of Mother Earth so that a blowout produced these hills, can have my ballot. It's great beyond the expressive power of Boston English up here. Birds, trees, flowers, brooklets—everything but the real Rosalind—and the transparent drop for a sunset and moon rise within ten minutes in a Belasco production. But we're not worrying about that just now—we're trying "for to forget" the long and weary hours of waiting we've put in, hoping we'd hear a noise like the I. C. C. granting that one-twentieth of one hundred per cent advance.

I wonder just how long those Mr. Commissioners think business can stand on one foot. There are a good many ostriches and pelicans in the commercial world—but not many of the circus kind. When your competitor is doing every stunt calculus offers to figure out how he can sell his goods without going completely broke it's no symptom of joy to wait, like the bunch at the county fair, for the balloon to go up, before you know what it's going to cost to send your stuff to the fellow who buys it f. o. b. his own back door. What's more, these R. R.'s have got to know what's doing. How can they make out a decent budget when nothing will budge? You can't buy ten dollars' worth of stuff for fifty cents—but that's what the efficiency experts who get rich writing for magazines want 'em to do. You've got to show me, Tom—I don't want to pay a bonus to any railroad for anything—but I do want to get a "quid-pro-quo." A little less howling about a "living wage" and a bit more action on a fair and profitable rate will solve so many of the ills that are inoculating business that everyone will say—when it comes—"Why didn't we think of that before?"

The great trouble is, Tom, we don't realize that "Transportation" is part of our social, moral, financial, physical, mental and philosophical existence. But it costs money—and it's about time some real big fellow with genuine nerve got up and said so in a voice like Thunder. Then maybe the "dear peepul" would come to—the I. C. C. would throw in their high gear—the R. R.'s could buy a new suit of clothes occasionally—and commerce would come into its own again.

Yours hastily, but always for that five per cent,

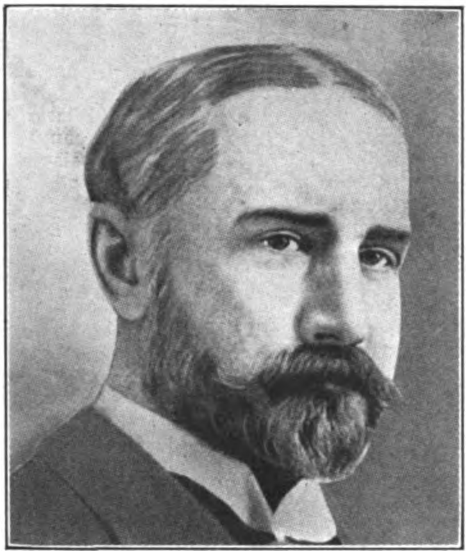
S. H. IPPER.

A hundred-point man is one who is true to every trust; who keeps his word; who is loyal to the firm that employs him; who does not listen for insults nor look for slights; who carries a civil tongue in his head; who is polite to strangers, without being "fresh"; who is considerate toward servants; who is moderate in his eating and drinking; who is willing to learn; who is cautious and yet courageous.

Hundred-point men may vary much in ability, but this is always true—they are safe men to deal with, whether drivers of drays, motormen, clerks, cashiers, engineers, or presidents of railroads.—Elbert Hubbard.

"A nursed grudge, growing out of a surly answer, has been responsible for many of the troubles of the railroads."—Fairfax Harrison, President, Southern Railway.

Personal



Henry S. Pritchett.

DOCTOR HENRY S. PRITCHETT, president of the Carnegie Foundation, has been elected director of the Santa Fe System to fill the vacancy caused by the recent death of Byron L. Smith, of Chicago. Doctor Pritchett was formerly president of the Mississippi Institute of Technology and is known as one of the greatest educators in the United States. As a philanthropist and president of the Carnegie Foundation, he has wielded a great influence for the betterment of mankind.

Frank Scott.

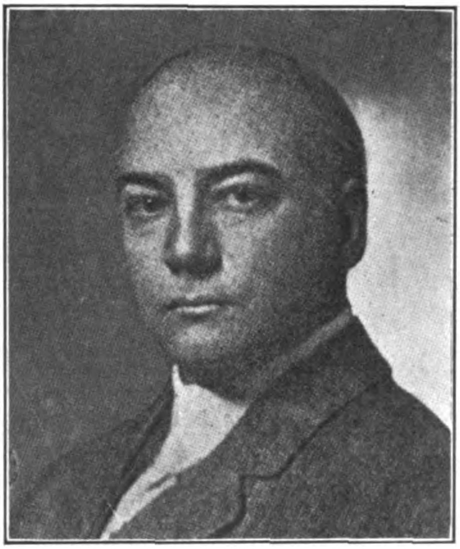
OWING to the death of Mr. M. M. Reynolds, vice-president in charge of finance and accounting, Frank Scott has been appointed vice-president and treasurer in charge of all finances of the Grand Trunk Railway Company. Mr. Scott is a member of a distinguished Montreal family, being the son of the late Dr. William E. Scott, M.D., for many years Professor of Anatomy at McGill University and Chief Medical Officer of the Grand Trunk Railway Company and is a brother of the Rev. Canon Scott, of Quebec, one of the leading Canadian poets. Mr. Scott has been treasurer of the Grand Trunk Railway for the past thirteen years adding to that office treasurership of the Grand Trunk Pacific in 1906. He entered railway service in 1879 as clerk in the Audit Department of the Grand Trunk and has risen steadily to the vice-presidency. In 1891 he was appointed secretary of the Audit Board and Purchasing Committee. Two years later he was made assistant treasurer and succeeded Mr. Charles Percy as treasurer in 1901. He is a member of the Board of Directors of the Grand Trunk Pacific; past president of the Society Railway Financial Officers of America and is a former chairman of the St. James Club, Montreal.

William C. Tompkins.

WILLIAM C. TOMPKINS, who has recently been appointed assistant to the vice-president of the Grand Trunk Railway Company, entered the service of this road September 1, 1885, in the office of auditor of pay rolls. Two years later he went over to the office of the general manager, which afterwards became the president's office. In May, 1908, he became secretary to the late vice-president, Mr. M. M. Reynolds, remaining in charge of that office during Mr. Reynolds' service with the company.

Albert J. Stone.

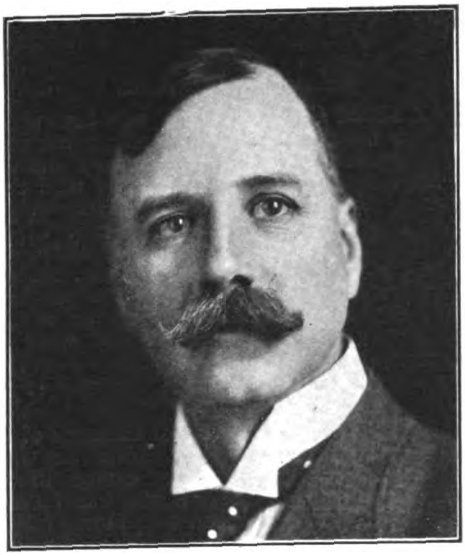
ALBERT J. STONE, general manager of the Erie Railroad at New York, has been elected vice-president in charge of the operating department. Mr. Stone was born at Holly, Mich., 1873. Educated at Hornell High School, Hornell, N. Y., and the Elmira Business College, at Elmira, N. Y. He entered railway service in 1888 as messenger on the New York, Lake Erie and Western, and remained with the road and its successor, the Erie, in various positions in the operating department until 1902, when he became assistant to the general manager. In 1903 Mr. Stone entered the service of the Delaware and Hudson Company as general superintendent. In 1905 he was appointed assistant general manager of the Erie and its controlled lines, and in 1907 he became general superintendent of the same road, until January, 1913, when he was appointed general manager.



ALBERT J. STONE.

Walter H. Ardley.

WALTER H. ARDLEY, who has been appointed comptroller of the Grand Trunk Railway System, has been thirty years in the services of this road and has risen from

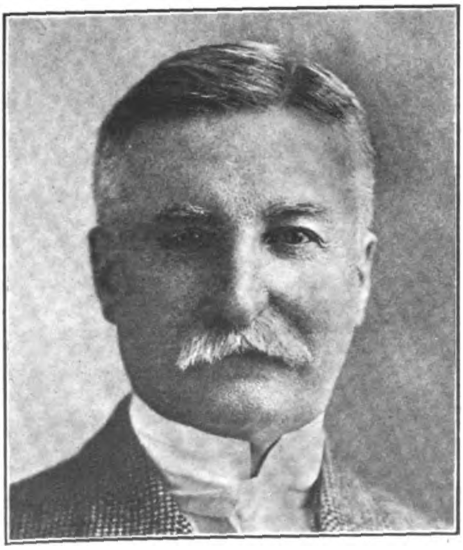


Walter H. Ardley.

the junior clerkship to his present position as Chief of the whole Accounting Department of the big System. He entered railway service November 5, 1884, and has been chief clerk and general bookkeeper in general auditor's office 1893 to 1907; auditor of disbursements, 1907 to 1908; acting chief auditor, August 31 to December 31, 1908 and general auditor Grand Trunk and Grand Trunk Pacific Railways from January 1, 1909 to date. He was recently appointed to the Board of Directors of the Grand Trunk Pacific Railway.

W. R. Campbell.

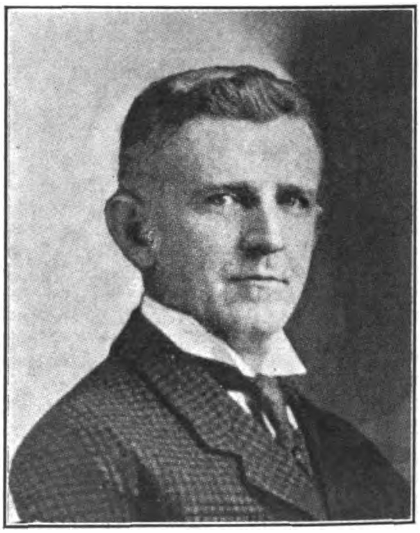
W. R. CAMPBELL who, on July 20th, became vice-president of the Susquehanna and New York Railroad Company, was engaged in various commercial occupations until 1885, at which time he entered the services of the Louisville and Nashville Railroad. He occupied various positions in the freight department of this road and with the Illinois Central, until October, 1889, when he was made secretary of the Transportation Committee of the Louisville Board of Trade. He left this position in 1893, to become freight claim agent of the United States Leather Company, with headquarters in New York and later became traffic manager of the same company. On January 13, 1908, he was appointed assistant to the president of the Susquehanna and New York Railroad, which position he held at the time of his recent elevation to the position of vice-president.



W. R. Campbell.

W. B. Groseclose.

W. B. GROSECLOSE, who was formerly assistant freight traffic manager of the Missouri, Kansas and Texas Railway, has been appointed traffic manager of the Detroit, Toledo and Ironton Railway, with headquarters at Detroit. Mr. Groseclose was born October 27, 1858, at Salisbury, N. C. He entered railway service in 1876 and from that time until 1888 was consecutively clerk, operator and agent of the Indianapolis & St. Louis and the Atchison, Topeka & Santa Fe, and cashier, agent and route agent of the Adams and Wells Fargo expresses. On December 10, 1888, he was appointed agent of the St. Louis, Arkansas & Texas, retaining that position until April, 1890, when he became general agent. From July, 1890, until July, 1893, he was general freight agent of the same road which is now the St. Louis Southwestern, of Texas. In July, 1893, he became the general manager of the Tyler Car & Lumber Company, Tyler, Tex., but in June, 1894, was appointed commissioner of the Galveston Freight Bureau. From January 15, 1895, to November 15, 1898, he was assistant general freight agent of the Missouri, Kansas & Texas, of Texas, at Houston, Tex. On November 15, 1898, he was appointed to a similar position on the Missou-



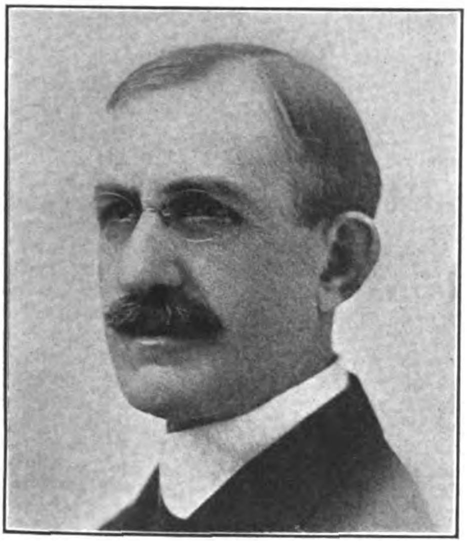
W. B. Groseclose.

ri, Kansas & Texas, at St. Louis, and on January 15, 1901, succeeded to the position of general freight agent. From June 1, 1910, to January 1, 1914, he held the position of assistant freight traffic manager, with headquarters at Chicago, as above noted.

C. B. Heiserman.

C. B. HEISERMAN, who recently became general counsel of the Pennsylvania Lines West of Pittsburgh, was born in Urbana, Champaign County, Ohio, September 18, 1862. He was educated in the Urbana public schools, and at Ohio Wesleyan University, graduating from the latter institution with the class of 1884.

Mr. Heiserman taught in the Urbana High School for two years while studying law. He was admitted to the Ohio bar in December, 1887, and in 1889 he was elected prosecuting attorney of Champaign County, Ohio. He served in this capacity until 1894, at which time he resigned to become Judge of the Common Pleas Court for the Second Judicial District of Ohio, to which he was elected in 1894 for a term of five years.



C. B. HEISERMAN.

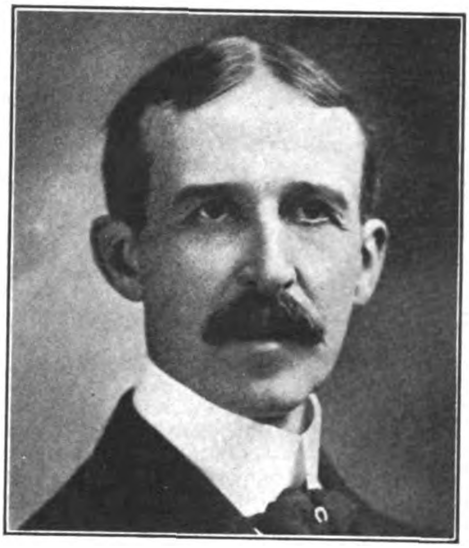
Mr. Heiserman was re-elected in 1899 for a second term of five years, but before the expiration of this term he resigned to become solicitor for the Pittsburgh, Cincinnati, Chicago and St. Louis Railway Company, at Urbana, Ohio.

On May 1, 1910, Mr. Heiserman went to Pittsburgh as general solicitor of the Pennsylvania Lines and on May 1, 1914, he was elected general counsel.

W. G. Phelps.

W. G. PHELPS, who has been promoted to the position of purchasing agent of the Pennsylvania Lines West of Pittsburgh, was born at La Porte, Ind. He was educated in the public and private schools of La Porte and Valparaiso.

Mr. Phelps was employed by the Vandalia Railroad from 1877 to 1884 at telegraph operator and agent, but he left the service in 1884. He re-entered the service of the Vandalia Railroad on November 5, 1888, as clerk in the general freight office at St. Louis. He was made chief clerk to the fourth vice-president, Pennsylvania Lines, on June 9, 1901; on January 1, 1913, he was appointed assistant purchasing agent, and on June 1, 1914, purchasing agent of the Pennsylvania Lines.



W G. PHELPS.

Ernest Baxter.

ERNEST BAXTER, who has recently been appointed purchasing agent of the St. Louis Southwestern Railway, was born October 11, 1882, at Delmer, Ont. He was educated in the public schools and in March, 1903, entered the service of the Michigan Central Railroad as a messenger. From May to Sep-

ERNEST BAXTER.

tember, 1903 he was a clerk with the Algoma Central & Hudson Bay Railway, at Sault Ste. Marie, Ont., October, 1903, to March, 1905, secretary to superintendent of the Grand Trunk Railway, London, Ont., and from April, 1905, to February, 1906, operating departments of the Cincinnati, Hamilton & Dayton Railway, at Indianapolis, Ind., and Missouri Pacific Railway at St. Louis, Mo. Mr. Baxter took service with the St. Louis Southwestern Railway and from February, 1906, to April, 1909, was secretary to general manager and from then until his recent promotion chief clerk to president. His appointment as purchasing agent of the St. Louis Southwestern was effective June 22, 1914.

R. E. Simpson.

R. E. SIMPSON who was recently appointed general superintendent of the Southern Railway, was born at Glen Alpine, N. C., in 1870. He was educated in the common schools and began railway work in 1882, as a water boy for the section gang on the old Western North Carolina Railroad, now part of the Southern. From water boy, he became a section man, then section boss and later work train boss. After that, he became a conductor, trainmaster, assistant superintendent and finally superintendent. In the latter position, he has at various times, had charge of three different divisions and was superintendent at Knoxville, at the time of his promotion to the general superintendency. His actual services to date, have covered a period of thirty-two years.

R. E. SIMPSON.

Edward L. Lalk.

EDWARD L. LALK, general agent of the Santa Fe System at Pittsburgh, has been elected president of the Traffic Club of that city. Mr. Lalk was born on June 15, 1857, in Burlington, Ia., where he was graduated from the high school. He entered railway service in 1873 as a clerk in the treasurer's office of the Burlington & Missouri River Railroad. From July, 1873, to 1875 he was with the Chicago & Paducah Railroad of Streator, Ill.; from 1875 to January, 1876, paymaster for the Quincy, Alton & St. Louis Railway, Quincy, Ill.; January, 1876, to August 1, 1877, clerk in the general freight office of the C. B. & Q. in Chicago; August 1, 1877, to October 1, 1881, cashier and paymaster of the Burlington & Missouri River Railroad and agent at Atchison, Kan.; 1881 to October, 1884, auditor, Northwestern Traffic Association, and acting commissioner for the Burlington, Wabash and Rock Island pool, Chicago; October, 1884, to October, 1886, freight agent, National Despatch Lines, Chicago.

EDWARD L. LALK.

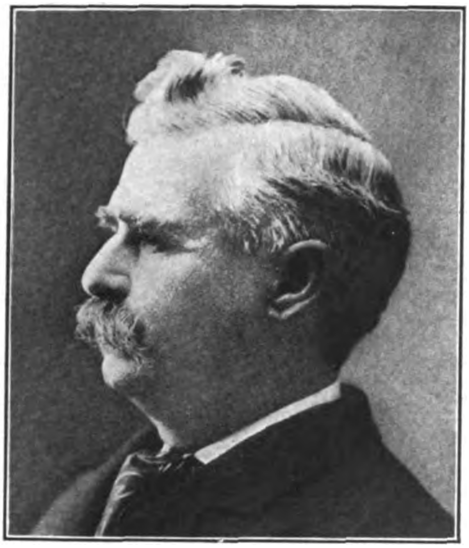
Mr. Lalk commenced service with the Santa Fe in the auditor's office in Topeka, where he remained from October, 1886 to March, 1887, from which date until 1896 he was out of railway service. In March, 1896, he returned to the Santa Fe as a clerk in the freight department in Chicago. He was appointed general agent for the freight department in Pittsburgh, Pa., on September 1, 1898.

He is one of the best known traffic officials in the State of Pennsylvania.

OBITUARY.

William E. Clark.

WILLIAM E. CLARK, who for a number of years was connected with the Boston and Maine Railway, died at Charlestown, N. H., on July 5th. Mr. Clark was born in Manchester in 1847. He enlisted in the navy at the age of sixteen and served in the navy for three years, participating in the capture of Fort Fischer. Soon after the war, Mr. Clark engaged in the business of railroad bridge building and later was made roadmaster of the Connecticut Division of the Boston and Maine, where he served for nearly twenty-five years. About 1897, he accepted a position with the



William E. Clark.

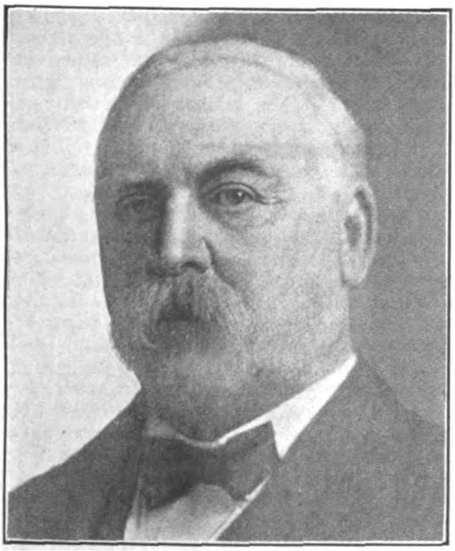
Rail Joint Company of America, and since that time has been actively engaged in the sales department of that company, there having been few sections of North America that he has not visited.

Martin L. Clardy.

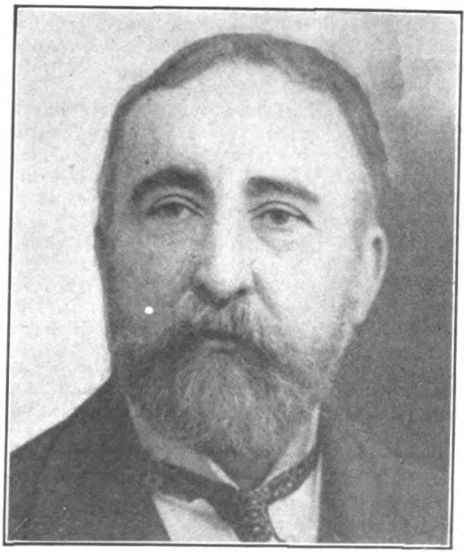
MARTIN L. CLARDY, vice-president and general solicitor of the Missouri Pacific and of the St. Louis, Iron Mountain and Southern Railway Companies, died in St. Louis, on July 5, 1914. Mr. Clardy was born in Ste. Genevieve County, Mo., in 1844, and served as a boy in the Confederate Army, from which he retired at the close of the war with the rank of major. He was educated at the St. Louis University, the University of Mississippi and the University of Virginia. He was a graduate of the Academic Department of the University of Virginia and also studied law in the same institute. In 1878, Mr. Clardy was elected as the representative in Congress of the whole first district of Missouri. He represented this district in the 46th and 47th Congresses and after the State was redistricted, represented the 10th Congressional District of Missouri in the 48th, 49th and 50th Congresses, serving until 1889. He had the distinction of being the chairman of the Committee of Commerce of the House of Representatives at the time of the passage of the original Interstate Commerce Act and had no small part in the preparation of the measure. In 1884, Mr. Clardy was a delegate at large to the Democratic National Convention in Chicago.

About a year after his retirement from Congress, he first became associated with the Missouri Pacific and Iron Mountain companies as assistant to Judge H. S. Priest, who was at that time general attorney of the companies for Missouri. When Judge Priest was appointed to the United States bench in 1895, Mr. Clardy succeeded him as general attorney for Missouri and served the companies in that capacity, also having charge of all matters pending before the Interstate Commerce Commission until 1909, when, upon the retirement of Mr. A. G. Cochran, he became vice-president and general solicitor which position he continued to occupy until the time of his death.

Melville Ezra Ingalls, former chairman of the Board of Directors of the Cleveland, Cincinnati, Chicago & St. Louis Railway, died July 11th, at Hot Springs, Va. Mr. Ingalls was born in Harrison, Me., September 6, 1842. He was reared on a farm and was educated at Bridgeton Academy and for a time studied at Bowdoin College. He received the degree of LL.B., from Harvard in 1863, and also received the honorary degree of A.M. from Bowdoin in 1902. He began to practice law at Gray, Me., but soon removed to Boston, where in 1867 he became a member of the Massachusetts senate. In 1870



Martin L. Clardy.



Melville E. Ingalls.

Mr. Ingalls entered the railway business. In 1871 he was appointed receiver of the Indianapolis, Cincinnati & Lafayette Railroad and moved to the Middle West. He reorganized the company and in 1873 became the president of the road. In August, 1876, it failed again and he was once more appointed receiver. Out of this ruin in 1880 rose the Cincinnati, Indianapolis, St. Louis & Chicago Railway of which he was elected president. In 1889, this road and the Cleveland, Columbus, Cincinnati & Indianapolis Railway were consolidated under the name of the Cleveland, Cincinnati, Chicago & St. Louis Railway. Mr. Ingalls was elected president and continued in that office until February 1, 1905, when he was elected chairman of the Board of Directors. From October 1, 1888, until February, 1900, he was also president of the Chesapeake & Ohio Railway and from January, 1881, to October, 1883, he was president of the Kentucky Central Railroad. His retirement from the chairmanship of the Board of Directors of the "Big Four" in 1912, which was really a declination to be re-elected, was inspired by a realization of failing health. He was also formerly president of the Merchants' National Bank in Cincinnati. The Joint Traffic Association, which the United States Supreme Court later held to be in conflict with interstate commerce and anti-trust laws, was organized by Mr. Ingalls. Besides the widow and daughter, Mr. Ingalls is survived by four sons, Melville E. Ingalls, Jr., and Fay Ingalls, of New York; George H. Ingalls, of Chicago, and Albert S. Ingalls, of Cleveland.

Henry A. Angell, a pioneer car manufacturer of Adrian, Mich., died at his home in that city on July 27th, at the age of 88 years. About the time of the Civil War he held the contract for supplying the Michigan Southern and Northern Indiana R. R. with car wheels.

W. S. Becker, assistant to vice-president of the Norfolk & Western Railway and formerly general superintendent of the Western Division, with headquarters at Bluefield, W. Va., died at his home in Bluefield, July 20th. Mr. Becker was born at Salem, Ala., in 1857. He began his railway career in 1899 as a brakeman with the Union Pacific R. R. He was assistant trainmaster, trainmaster and chief clerk to general manager of the Norfolk & Western Railway from 1898 to 1902 and then for a time was with the Chicago & North Western Railway. He returned to the Norfolk & Western as superintendent of the Pocahontas Division. He was appointed general superintendent in 1905 and assistant to vice-president, in December, 1912.

Robert M. Boyd, general agent of the freight department of the Chicago, Milwaukee & St. Paul Railway at Seattle, Wash., died in that city, July 5th, aged 45 years.

Henry R. Emerson, formerly from 1904 to 1907, minister of railways and canals for Canada, and previous to that premier of New Brunswick, also a member of the Dominion Parliament, died on July 9th, at Dorchester, New Brunswick.

P. J. Halloran, chairman of the executive board of the Brotherhood of Railroad Conductors, died suddenly of heart disease in Boston on July 16th.

Robert Moran, master mechanic of the Louisville & Nashville Railroad, with headquarters at Nashville, Tenn., died in the surf at Pensacola, Fla., on July 31st. It is believed heart failure was the cause of his death.

Daniel J. Malone, superintendent of shops, of the Oregon Short Line, at Pocatello, Idaho, was shot and killed, July 24th, by Frank Madden, foreman of the tin shop. The murderer, with the same revolver, at once killed himself. The men were both old employes and had long been friends, but Madden, it is believed, had become mentally unbalanced because of criticisms received on account of unsatisfactory work. Mr. Malone was born at Western Point, Md., in 1860, and he was on the Union Pacific for a number of years before going to the Oregon Short Line in 1890. Madden was 60 years old. Malone had four brothers, two of whom met death in murders very much like this one; Edward in West Virginia in 1896, and Michael, division foreman on the Southern Pacific in Nevada, in 1906.

John Niblock, formerly superintendent of the Canadian Pacific Railway at Calgary, died at his home in Victoria, B. C., on July 30th.

Eugene E. Osborn, formerly vice-president of the Chicago & North Western, died at Frederick, Md., July 20th, aged 60 years. Mr. Osborn was born at Norwalk, Conn., May 1, 1854, and was a graduate of the Sheffield Scientific School of Yale University. He entered railway service in 1894 as general attorney for the Chicago & North Western. In June, 1901, Mr. Osborn was elected vice-president and secretary of the North Western and assistant secretary of the Chicago, St. Paul, Minneapolis & Omaha, which positions he held until his retirement from active service in 1911.

William Barstow Strong, formerly from 1880 to 1889 president of the Atchison, Topeka & Santa Fe, died at Los Angeles, Cal., on August 3rd. He was born at Brownington, Orleans County, Vt., on May 16, 1837, and graduated from Bell's Business College, Chicago, in 1855. He began railway work as station agent and telegraph operator in March of the same year at Milton, Wis., and was later station agent at White Water and at Monroe, and then general western agent of the Southwestern Division of the Chicago, Milwaukee & St. Paul at Janesville, Wis. From 1865 to 1867, he was assistant superintendent of the McGregor & Western, now a part of the Chicago, Milwaukee & St. Paul. He was then to 1870 general western agent of the Chicago & North Western, and from 1870, to 1872, was assistant general superintendent of the Chicago, Burlington & Quincy at Burlington, Iowa. In 1872 he was appointed assistant general superintendent of the consolidated Burlington & Missouri River and the Chicago, Burlington & Quincy at Chicago, and in 1874 became general superintendent of the Michigan Central at Chicago. The following year he was appointed general superintendent of the C. B. & Q., and from 1877 to 1880 was vice-president and general manager of the Atchison, Topeka & Santa Fe at Topeka, Kan. He was then president of the same road, with headquarters at Boston, Mass., until 1889, at which time he retired from active service.

Newspapers and Railroads as Factors in Southern Development*

THE interests of Southern newspapers and Southern railroads in the development of our section are very closely interwoven. Every increase in the population of a community and every advance in community prosperity mean increased circulation and advertising patronage for its newspapers and increased traffic for its railroads. This identity of interest, therefore, affords a sound business basis for co-operation between the newspapers and the railroads for community development, and, as representing one of the important railroad systems of the South, I am glad to have this opportunity to suggest some of the lines along which I believe that the newspapers and the railroads may co-operate most effectively.

If our efforts are to be most successful, we must work along three lines: First, that of aiding those already living in the South to make a larger and more profitable use of their opportunities; second, that of endeavoring to retain in the South those who may contemplate leaving in the hope of bettering their condition, and, third, that of attracting to each community additional population of the character that may be desired by the people already living there. From its organization Southern Railway Company has been a champion of the South. Its management has believed that one of its highest functions was that of co-operation with the people along its lines for the highest development of the territory that it serves for the benefit of all alike. Southern Railway Company was a pioneer in this co-operative work and I take pride in claiming that it is doing more work of this kind and doing it more effectively than any other railroad company in the United States. We have gradually broadened the scope of our co-operative efforts until we now have a strong auxiliary organization, co-ordinated with but not part of our regular operating organization, and this active and militant force is devoted exclusively to co-operating with the Southern people for mutual welfare. The largest unit of this organization is that engaged in promoting the larger production in the South of staple field crops, fruits and vegetables, and the building up of all branches of the live stock industry through the raising of more and better animals. As successful production depends largely upon profitable selling, we have market agents who devote their entire time to bringing producers along our lines into touch with buyers and advising as to the best methods of packing and shipping. We are endeavoring to retain Southern people in the South by disseminating among them better information as to Southern resources and opportunities, by seeking out individuals who contemplate removing and presenting facts to demonstrate that the opportunities which they have in the South are equal to or superior to those which they may hope to find in the localities to which they contemplate going, and by declining the allure of immediate revenue and the competitive temptation to participate with connecting lines of railroads in reduced rates for home-seekers leaving the South. We are endeavoring to attract additional population and capital to the South by direct solicitation of industries and farm settlers and by disseminating information as to the resources and opportunities of the South throughout the United States, Canada, and Europe. In this connection, I may mention that Southern Railway Company is the only railroad company in the United States which has an exhibit in the Anglo-American Exhibit now in progress in London, this exhibit being devoted entirely to showing the resources of the territory which we serve. It is our purpose to continue our work along these lines and constantly to endeavor to make it more efficient, and I know, from past experence, that one of the most effective ways of doing this is through the co-operation of the press of the South. It is our practice, from time to time, to send to the newspapers information which we believe will be of interest to their readers and, at the same time, may be helpful to the entire South, or to particular localities. That our view as to the interest and helpfulness of the information thus sent out is shared by the editors is demonstrated by the general publication which our bulletins have received.

In addition to promoting the development of the South through publicity, the Southern press can aid materially in this work through the influence of its editorial columns upon public opinion affecting governmental policies. Every community in the South is inviting the investment of new capital, and it is self-evident that one of the inducements to invest money in any community will be a knowledge that the public opinion of that community is such as to conserve the capital already invested there and attract additional investments by something more enduring than a personal welcome. In urging the building up of a public opinion that will support such governmental policies as will encourage investments, I have in mind, not merely investors in other parts of the United States and in Europe, but also, and more particularly, our own Southern people, for the time has now come when, by reason of the accumulations of her recent prosperity, the South is able, in a greater degree than ever before, to finance her own enterprises. As an illustration of this, I may mention that Southern Railway Company recently arranged for an issue of Atlanta and Charlotte Air Line Railway bonds to the amount of $20,000,000 to be used in completing the double-tracking of the line between Washington and Atlanta. The first installment of these bonds, to the amount of $5,500,000, were sold to a syndicate in accordance with the practice in such matters, but, believing that Southern bankers would be glad to participate in this financing and thus become more directly interested in one of the great transportation systems of the South, as I would like every responsible man in the South to be, I secured the consent of the syndicate to reserve a limited amount of these bonds to be offered to Southern Railway depository banks throughout the South. The response to this offer far exceeded my expectations and was most gratifying, for it was a new departure in railroad financing. Subscriptions were received footing up more than twice the amount of bonds originally set aside for the purpose and exceeding by more than $100,000 the amount which I was finally able to obtain for

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*From an address delivered by Fairfax Harrison, president of the Southern Railway, before the South Carolina State Press Association on July 7, 1914.

Southern subscribers. The success of this bond offering is eloquent testimony to the growing financial strength of the South. It is an indication that the South will henceforward, in constantly increasing measure, finance Southern enterprises and keep at home money which would otherwise be sent to other localities for the payment of interest and dividends. It should encourage us to promote and to support by public opinion policies which will hasten the conversion of the South into a section of investment as well as of production.

In speaking of the attitude of the press toward invested capital I should not be understood as opposing just criticism of any improper policies or unjust acts on the part of corporation officials or others. Speaking for Southern Railway Company, I court the widest publicity for all of its corporate acts and policies and invite the freest discussion of them. I acknowledge that my official conduct is frequently stimulated and modified by the comment of the press. I do ask, however, that criticism shall at all times have for its basis complete knowledge and that, prior to accepting as the truth any report concerning our affairs that may become current, enquiry as to it shall be directed to me or to some other responsible officer of the company.

Judged by the editorial comment in the Southern press as well as by personal contact with Southern men, I believe that there is to-day throughout the South a better and more general understanding of railroad policies and the difficulties encountered in railroad operation than ever before. I find that there is a general disposition on the part of the public to appreciate that the business practices of the railroads to-day are founded, not upon an arbitrary system of exploitation, but upon the necessity of securing and of conserving a revenue adequate at once to carry the responsibilities of the past and to permit progressive growth in the future—in other words, that a railroad, like every other living thing, has to struggle for existence and make both ends meet. The public view of the railroad question has undoubtedly been clouded by revelations of the exploiting of certain railroads for the purely selfish ends of those who controlled them, but when the "shouting and the tumult," which has been stirred by these revelations, and the political use made of them dies away, the sober second thought of our people will, I am confident, differentiate in their criticism between the purely dishonest acts of some individuals on the one hand and on the other hand the survival in the practice of other individuals of a conception of the economic status of a railroad utterly and entirely different from the conception which a changed view of public questions has established as a rule of conduct today. It has been demonstrated to be impossible to change in a year, or in a few years, habits of mind and habits of action which were once fostered by government and applauded by public opinion simply because there are new leaders of public opinion with radically different views. I belong to the new school of opinion myself and I suggest this point merely that intelligent men who are onlookers may appreciate it as I have appreciated it in my experience in the heat of the conflict of economic change. To illustrate: the State of South Carolina has been one of the leaders in the movement now experienced in all parts of the United States for what is called "state wide" control of the sale and distribution of intoxicating liquor. There is an important body of public opinion in every State of the United States which earnestly contends that the control of the liquor traffic is not merely a policy of government revenue, not an economic measure, but a moral issue and yet, for all the growth of this view, public opinion generally has not yet accepted as a truth that there is a moral degradation to a gentleman who takes a drink in his own or a neighbor's house. So it is with the railroad question: there are still many respectable men who believe in the policy of monopoly of public utilities as a doctrine of efficiency and of economic strength, despite the clamor of the advocates of a strict enforcement of the doctrine of competition.

I find that the chief criticism of the administration of the railroads in the South to-day is on the adjustment of rates. Many communities in the South have told me that they do not care what the rates are, if only they are so adjusted that there shall be no discrimination in favor of one locality at the expense of another. To some earnest and intelligent men it seems that it must be an easy matter for a railroad manager who is so disposed to wipe out all the existing discriminations: and I find some impatience at references to the history of rate-making in the South in attempted explanation.

Most of those to whom I am now speaking know that railroad freight rates in the South were built on the so-called "basing point" system, a system which started with admitted discriminations but justified them by the competition, whether by water or by rail, which existed at the favored points. There is little doubt that the growth of the basing points, which this system stimulated, has been of advantage to the entire South by creating important distributing towns in the interior of a country where, when the railroads were built, there were few towns of any size away from the seaboard. It is difficult also to believe that the historical rate system in the South, whatever was its justification, has been oppressive to the country, for we see Southern towns, still growing and prospering with a vigor which excites the astonishment of all observers, which for their entire municipal existence have been in dependence for communication with the rest of the world upon these rates which are now condemned. In the demands for readjustment one must recognize, therefore, an expectation of selfish advantage back of the words "fair" and "just" which are so eloquently used against the railroads, but I, for one, respect this selfishness as an expression of a virile community ambition, and I recognize that the railroad is going to share in the prosperity of a growing town and in the multiplication of towns and, to the extent of its abilities, should do its part to promote that prosperity without preconceptions as to methods. Such being the disposition, the problem of the railroad manager has practical limitations. He has inherited a situation for which he is no more responsible than for the shape of his nose, and it is as much part of the railroad as his nose is of his face. The sudden application of a new rule of absolute equality, the literal and immediate measure of the principle that the rate for the short haul shall always be less than the rate for the long haul, without other compensation, would necessarily bring a railroad face to face with an important reduction of its total revenue. If the railroad is to continue to live and to grow after such a surgical operation there must at the same time be a general readjustment of its rates with advances in one direction compensating for reductions in another. At a time when there has been an increase in all of the elements of its operating costs, a railroad finds a serious economic difficulty in arbitrarily reducing its revenue, especially when it depends upon the growth of its income to justify the provision of new capital to enlarge and improve its plant in compliance with public expectation. In this posture of the problem, I, for one, welcome the intervention of regulating authority, if only regulating authority recognizes that the exercise of power carries with it a correlative assumption of responsibility. I do not say this from any lack of courage or from any lack of confidence in our ability to work out the problem fairly on our own responsibility, but from a realization of the practical position of the railroads in public opinion to-day. I trust that it may prove easier for a government board so to adjust rates as to satisfy every one and at the same time produce a total requirement of revenue, that it can be for a corporation subject to all the limitations of a reputation for rapacity, which unfortunately the railroads still have in the minds of many good people.

If the Interstate Commerce Commission would prescribe all our rates, as they have the power to do, adjusting them on a basis to yield us a revenue sufficient to carry on our operations, make improvements and pay a just hire to capital, as well as to labor, I would rejoice in their action in the consciousness that we were thus left free to devote our energies to the improvement of our competitive service, with the confidence that we could give such service as would win and hold for us the respect and affection of all the Southern country. But, whether this consummation ever can be attained, I rely upon our action in the future, based as it will be upon a desire at all times to be fair, to illustrate our motives, and to bring home to the public a realization that a railroad can claim all the respect due to integrity and patriotism.

I believe then that we may expect in the future a better understanding between the public and the railroads than ever before, that the railroads will better appreciate the viewpoint of the public, and that the public will better understand their interest in prosperous and efficient railroads. I believe, too, that, in bringing this about, the press of the South will be a most important factor and that the newspapers and the railroads, working together, will become ever more efficient factors in the promotion of Southern prosperity.

Car Supply in Relation to Marketing the Wheat Crop of 1914

By G. C. White, Transportation Specialist, Office of Markets, U. S. Dept. of Agriculture.

SINCE the publication in the *Agricultural Outlook* of May 22 of the forecast of the yield of wheat in the United States for 1914, the question of car supply to move the crop has been engaging the attention of the railroads and grain men. Trade journals have called attention to a prospective car shortage, and railway periodicals have pointed out the necessity of having all box cars thoroughly overhauled and put in condition to handle bulk grain.

The Office of Markets of the United States Department of Agriculture has undertaken some investigations to ascertain to what extent a car shortage this year is anticipated by the grain trade, on what roads shortages are most acutely felt, to what extent the trade keeps in touch with the roads, advising prospective needs, what information is given out by the roads as to ability to fill all orders promptly or steps taken to minimize shortages, and whether or not the car supply keeps pace from year to year with the increasing need for cars. Replies received cover the States of Texas, Oklahoma, Kansas, Missouri, Nebraska, Iowa, and Illinois. These seven States have for 1914 an estimated wheat yield of 385,000,000 bushels.

The sentiment is by no means universal among the country elevators that there will be a car shortage. The belief that there will be a shortage is most prevalent among the country elevators of Kansas. Expressions from terminal elevator points indicate that there will be a shortage in all States.

Opinions as to the roads on which car shortages are most acutely felt amount to little and are apparently based on the particular road on which a man's elevator is located. One man answers that a certain road is most prompt in furnishing cars and another man names the same road as least prompt. Attention is called to the fact that adequate car supply is sometimes due to the volume of inbound merchandise, which, when unloaded, makes available empties for outbound grain shipments. Points served by more than one road testify that they can get cars even when noncompetitive points are suffering from a shortage.

Information from the country elevators is, for the most part, that their advice to the roads of cars needed is in the form of orders for cars at the time they are wanted. Terminal elevators and large grain dealers, however, have kept in closer touch with the situation and have advised the carriers as far in advance as possible of the prospective needs.

On the part of the roads statements from officials through the press are given to the public, and growers and elevator men are personally advised by local agents, traveling freight agents, and other representatives of all steps taken to minimize shortages. Every purchase of new cars is advertised and assurance is given that all cars are being put in condition to handle bulk grain. In some cases large numbers of stock cars are being temporarily fitted up for handling grain. As far as possible, foreign empties are being held by the grain-carrying roads, and country sidings are being filled with empties for the first rush.

It is the consensus that the increase in car supply does not keep pace from year to year with increasing needs for cars.

The average carload of wheat contains 1,250 bushels. On this basis it would require 524,000 cars to move the estimated crop of winter wheat for the entire United States the present year and 308,000 cars to move the crop of the seven States here discussed. However, as noted in the *Agricultural Outlook* of March 23, 1914, only 58.1 per cent of the wheat produced is shipped out of the county where grown, and on this basis the number of cars required would be 304,444 and 178,948, respectively. On the same basis it would require approximately 432,000 cars to move the entire wheat crop of the United States.

The total number of box cars owned by all the roads in the United States June 30, 1911, (the latest report available), was 990,313. Taking 15 of the principal roads in the seven States covered by our investigations, we find that they had on July 30, 1913, 60,446 miles of road and 223,487 box cars. Their aggregate mileage increase for the two years from June 30, 1911, to June 30, 1913, was 3 per cent, the increase in the number of their box cars, 3 per cent, and the increase in the tonnage capacity of their box cars, 7½ per cent. The figures for individual roads vary from a decrease of 14 per cent in the number of box cars to an increase of 32 per cent, and in tonnage capacity from a decrease of 5 per cent to an increase of 50 per cent. These 15 roads contain approximately 25 per cent of the entire mileage of the United States and own approximately 22 per cent of all the box cars. The seven States in question produce approximately 40 per cent of all the wheat of the United States. What the percentage of increase is over the 1911 crop is hard to determine for the area served by these 15 railroads, but it is safe to say that it has been far greater than the percentage of increase in car supply, inasmuch as the estimated yield of winter wheat for the entire United States for 1914 exceeds the 1911 crop by 52 per cent, and the increase in car supply during 1913-14 has been below normal throughout the country.

These figures are given, not as furnishing an exact formula for determining the number of cars needed to move this year's wheat crop and for estimating the shortage in number of cars, but as indicating some of the factors to be taken into consideration in the problem of car supply and car shortage. Other factors are these: The wheat harvest will extend over three months or more from about June 10. Doubtless much wheat will be stored after harvest awaiting better prices. Not all the cars of any road serving the wheat belt are available for wheat traffic. The Santa Fe system, for instance, with extensive mileage in New Mexico, Arizona, and California, must necessarily keep a large part of its cars confined to the business of those States. Account must be taken of general commercial conditions also, and of whether the tonnage of other commodities handled in box cars is above or below normal during the wheat movement. Indications this year are for a heavy crop of corn and oats, the movement of both of which commodities will still further complicate the situation as regards wheat.

Even where the entire mileage of a road is confined to wheat-producing territory, many of its cars are absent on other roads, and it may or may not have on its line a sufficient number of foreign cars to offset the absence of its own.

The terms used by different individuals in estimating shortages are by no means uniform. The majority express it in terms of percentage, which is accurate enough if we understand thereby that for a given period only a certain percentage of the cars ordered are furnished. In the long run every man gets all the cars ordered, and from that point of view there is no shortage. No statement of "car shortage" means anything until we know the time limitation and other conditions on which it is based. In its semi-monthly bulletins of car surpluses and shortages the American Railway Association lays down the rule that the figures must represent the differences between "cars ordered" on a given day and "cars available." "Cars available" is defined as any empties of the kind ordered, either en route in trains or on sidings, which can be used to fill the orders of that day, and includes also such loaded cars as will be made empty within 24 hours.

The opinion prevails in some sections that any shortage this year will be due more to lack of motive power and terminal facilities than to lack of cars. One of the greatest drawbacks has always been failure to load and unload promptly and too frequent reconsigning of shipments. The indications are that shippers and carriers are co-operating this year more closely than ever before in their efforts to avert a car shortage in the movement of the wheat crop.

Thou Shalt Not Kill

NOTE:—In the development of the safety movement, many novel appeals are made to employes in order to secure their active co-operation in the conservation of human life. The following appeal recently issued by the Frisco "Safety First" Bureau, constitutes a striking example of efforts made along such lines:

WHEN that supreme tragedy occurred—the death of Abel at the hand of Cain—a cry went forth over the land that has echoed downward through the ages until it is now striking the heart of every railroad man and his family—"THOU SHALT NOT KILL."

In this country when the watchword is SPEED, when the eternal cry is "DISPATCH," it remains for every employe of those who manufacture speed—the railroads—to ever keep before his eyes those words written in the first crimson flow of humanity's life blood—"THOU SHALT NOT KILL."

Where is there a trainman, shopman, carman, station or section man who has not watched with silent tongue and pallid cheek the bringing home of some bread winner, mangled, torn, thrust aside forever from the ranks of his comrades, through the thoughtlessness of a trusted employe; and heard the anguished gasp of the mother, wife, sister or daughter, as their all, their anchor in life was laid before them. And the whisper has passed among you—"Carelessness, that's all."

And you have turned away from the lifeless form, leaving Sorrow to keep silent company with Death, thoughtless of the lesson given you through this casting aside of another of your ranks.

Perhaps it was the defective belt, twisting and curling overhead, neglected a moment too long; perhaps a defective engine step, a baggage truck thoughtlessly rolled aside.

Every hour, every minute, some one, somewhere, is forgetting one of the rules of SAFETY, formed with the first law of nature, old as Time and blood-kin to the commandment—"THOU SHALT NOT KILL."

In a terminal yard of one of our Western railroads, a derailing switch designed for the protection and safety or the lives of those on incoming trains as they toiled up the mountain side through the silent watches of the night, was defective. Those who handled the switch many times each hour, knew of the weakness, the broken spring, but, they relied on the trackmen to find it. "They are paid to do that."

One morning at the dawn, four cars of rails slipped silently downward, passed uninterrupted through the costly derailing machine and dashed away as if in glee of victory.

Picture the mangled bodies found fourteen miles below, ground out of existence by the unerring aim of these steel projectiles. Picture the sudden realization of those thus robbed of their comrade, friend and breadwinner, that some one, somehow, had failed in his duty—had become a traitor to the cause of SAFETY.

To this day the switchmen in the shanty speak in whispers of the mad dash of those four cars down the mountain side and conjecture as to the scenes which transpired when the cars met their victims. Conjecture, yes, because not a living thing was found in that piled up mass of wreckage.

Did that command which has clung to humanity since the world was young occur to the regretting comrades? Did they point an accusing finger at the other and cry, "THOU SHALT NOT KILL?"

In the lands where standing armies are the pivots around which home, country and happiness center, it is considered a failure of life to become so maimed that army service is impossible. The one responsible is looked upon as a traitor to his country.

In the standing army of our railroads your generals look upon you, who through haste and contributory carelessness, deplete the ranks of a valuable lieutenant, as a traitor to your cause. They feel the need of each of you. When an accident occurs, they harken mostly to that part of the telegraphic report which tells of the death or injury of him who gave such full promise of faithful service on the firing line—the breadwinning line—but who must now forever lay aside his chosen profession and turn to the ranks of those who, likewise, have suffered irreparable wrong either through his own failure or the failure of others, to recall before too late, the one great law—"THOU SHALT NOT KILL."

A youth, a brakeman, in all the vigor of young manhood, was trying, years ago, to arrest the downward speed of a freight train, with the sleet and snow of a winter's night blowing about him and which glazed the car top with an icy coat that made treacherous footing underneath. This was at a time in our railroad history when the air brake was a stranger to our freight trains.

A few hours before these cars had been inspected and pronounced safe by those intrusted with their condition. From the top of one of the brake staffs a nut was missing.

In that rushing darkness where hands are eyes and where dependence is placed in comrades and co-laborers for the protection of life and limb, the brake wheel slipped from the staff.

Down, down, into nothingness a body was flung, to be mercifully received sixty feet below by the cradling strands of a right of way fence.

The boy lived, but during the year or longer that he was carefully nursed, did that thought come to him?—"THOU SHALT NOT KILL.' No. He thought only as you are thinking to-day,—"It's coming to us sooner or later."

There is nothing "coming to" railroad employes to-day, nor has there ever been, except through the lack of realization that in your hands you hold the life and happiness of many; that railroad men are not held hostages to the greedy maw of Destiny, but are the arbiter of their own fate.

Pick up the board with the protruding nail; report the improperly hung water spout, the defective coal chute apron, the defective bridge warners, the missing bolt. Don't be afraid to cry out against the faulty belt flapping overhead, the handcar with the weakened handle bar, the switch chain or draw bar lying in wait—a silent death—in the yards.

Don't pause in reporting the platform built too near the track, the broken board in the depot platform, the defective coach step, the lubricator glass in the engine cab and remember for all time—"THOU SHALT NOT KILL."

Don't hesitate in the belief that it's the other "fellow's job," don't pause to see if some one else intends to arrest the subtle hand of Death, but let the victory be yours. Taste the pleasure of having succeeded in saving a life, a limb, an eye.

Don't believe for one moment your employer—your General—will accuse you of interfering with his duties. These are YOUR duties. He is your partner in preserving life and preventing injury. He will take you by the hand and give you that true grip of fellowship that ever exists between those who have stood shoulder to shoulder in "doing unto others as you would be done by," in protecting the home, the women and children of our country.

Let me tell you right here, there never was and there never will be a general worthy of the position he has gained, but will salute the one in the ranks who shows the courage, and moral balance, to step forward and tell from whence comes the unseen bullet that is depleting the ranks. He wants to know it ten thousand times more than you, because, every man lost from his ranks decreases the efficiency of his machine, whether it be one to fight an enemy or one to fight a commercial opponent. He wants to know it because his eyes—like yours—can never grow accustomed to the sight of mangled bodies. Neither like you can he ever reconcile himself to the thought that "another good man is gone."

In all the mass of machinery in railroad shops, on railroad rails and in railroad yards, there is no machine so valuable as YOU. Did you ever think of that? Have you ever considered yourself as the most valuable, the ALL IMPORTANT machine possessed by railroads? You are. And the last thing you would ever do would be to damage or destroy ANY machine used by your employer, yet, you may be damaging or destroying one of those machines to-day.

A mechanical contrivance designed and built to perform one certain function in the day's great work of a railroad, can do no more. You, in the completeness of your being, can be remodeled, transferred from one level to another. The value of a machine is known. Your value is unlimited.

Add to you—the wife, the daughter—you possess more than all else. The human machine is yours by right of possession and to you is left the task of influencing that machine towards perfect service. The greatest influence that you can exert towards perfect service—and which means perfect happiness—is to instil into that human machine around which everything for you centers, the one thought,—

"To injure another is to harm yourself.
"To injure yourself is to harm your family."

Have you —the wife and mother—ever thought of the responsibility resting on your shoulders toward your son, the boy, who, in after years is entitled to his legacy of a place in the bread-winning class? Does his way to school lie across some railroad track? Along a pathway near which moving cars offer an attraction which may terminate in permanent injury and perhaps death?

Not only does your duty impel you to caution the breadwinner into the by-ways of safety, but also the boy—the breadwinner of the future.

Encourage him to see the death lurking in every moving car. Make him see the certain disaster hovering beneath the wheels, and bring him to that realization of the uncertainty of life which will cause him to resist the temptation.

From July 1, 1910, to December 31, 1913, there were 373 trespassers and outsiders killed on the lines of the Frisco Railroad and 1,404 injured.

A large number of these persons were boys, who, as a pastime, attempted to jump on and off moving trains. Think of the despair brought into their homes by the thoughtless act of a moment. Think what joy would fill a mother's heart could she be continually conscious of shielding her boy from the terrible horror that lurks everywhere the wheels of railroads revolve.

Some one has said:

"Men, by habit and nature, who are untrue to a trust are dangerous."

Are you—the mother—untrue to your trust? Are you dangerous? You are if your lips fail to caution the boy of his danger; fail to whisper into the husband's ear at morningtide,—"THOU SHALT NOT KILL."

The Red Tape Worm

By Howard Elliott, Secretary, Central Safety and Efficiency Committee, San Pedro, Los Angeles and Salt Lake Railroad.

I BELIEVE in my company and am proud of my profession.

I believe it is no offense to be in the business of moving persons and property from place to place.

I believe the railways of the United States for safety and efficiency stand supreme.

I believe their capitalization and rates are the lowest and their wages the highest among nations of the earth.

I have faith in their ultimate triumph.

I believe that there is, however, much red tape in the conduct of their business; that this red tape is as real a disease of the railroad system as is the tape worm of the human system, and that it acts similarly in that it performs no useful function and consumes energy that should be otherwise expended.

I believe that red tape may properly be defined as the unnecessary steps in the transaction of business.

I believe that red tape results from the shifting of responsibility, and that this is usually done through the medium of letter-writing.

I believe that many men look upon railroading as the science of shifting responsibility.

I believe that men try to evade responsibility for three reasons:

(1) Because it is easy to shift it.

(2) Because they feel incompetent to shoulder it.

(3) Because they fear criticism if they assume it.

I believe that the remedy is two-fold, compulsion and impulsion.

I believe that it should be made difficult to sidestep responsibility, and that this can be accomplished by broadening the scope of interest and authority, so that a man becomes charged with the duties of more than one department—then in the same way that a man cannot make a contract with himself, so no man could escape responsibility by writing letters to himself.

I believe that the hesitancy which men feel about tackling new problems is often ill-founded and that if given the necessary authority and the proper tools with which to work, they can produce creditable results.

I believe the ideal condition on any railroad is where all the officers and employes are allowed and encouraged to use all the knowledge that they have all the time.

I believe that red tape is expensive, directly in the cost of typewriters, stationery, letter presses and filing cabinets, and the salaries of stenographers and clerks, and indirectly in the loss of vital energy which results when men spend their time in "relay" work.

I believe that many men in railroad service think they are doing things really worth while, whereas an analysis of the day's work would disclose a mass of communications saying "Please note" and "respectfully referred" in a variety of ways.

I believe the distinction so well known to the law between "dilatory pleas" and "issues" should be understood and appreciated by railway men, and that instead of entering a "dilatory plea" (one which merely postpones the day of reckoning) when a matter is put up to them for solution, they should promptly resolve it into an issue—the exact point in controversy—and then *act*.

The "squib case" is the popular name for a famous lawsuit. No law course is complete without it. It appears in the reports as "Scott vs. Shepherd," and the facts are these:

Shepherd threw a lighted squib into the market place. (Now a squib is a dangerous article. I do not know the ingredients of which it is composed. Perhaps Colonel Dunn, of the Explosive Bureau, may know.) It alighted on a certain booth and the owner thereof, realizing its dangerous nature, immediately relayed it to another booth where the process was repeated. After several such performances, the squib fell on the booth of Scott, the plaintiff, where becoming "ripe," it exploded and put out one of Scott's eyes. Scott sued Shepherd and recovered, and the principle was then and there established that a man is responsible for the natural consequences of his own acts.

The railroad market place to-day is full of squib throwers. Important matters are tossed from one to another just as though they were squibs or infernal machines, likely to explode if held a moment longer. Shepherd throws it to Smith, he to Jones, Jones to Brown,—it is not until the matter becomes "ripe" that anything really happens. And all the while the man who is to be affected by the result, passes back and forth, impatiently waiting for a decision and wondering why no one seems to have sufficient interest or authority to bring the matter to a head and settle it. The next thing we know the man has gone to Springfield or Topeka or Washington and his grievance is embodied in House Resolution number so and so.

Go into the average railroad office to-day and take down the tissue copy book. Analyze the letters, dividing the wheat from the chaff. Under the former put the "issues," those letters which really decide something. Under the latter, put the "dilatory pleas,"—those which either "pass the buck" or which need never have been written at all.

I did go into a general superintendent's office one time and make just such an analysis. Here is what the first 100 letters in the copy book showed:

Plain letters of transmittal referring the matters to others for attention	40
Asking or answering simple routine questions	20
Enclosing agreements to heads of department in same building, for approval	20
Approving train service, details of which had been arranged by division officers	10
Definite rulings on sundry matters	10
	100

I went into a bank and asked the cashier this question:

"If you want to find out something from another officer of the bank, do you sit down and write him a letter?"

"By no means," he replied. "I either go to him, ask him to come to me, or send my clerk to get the information. The officers of this bank are all in plain view, as you see. How preposterous it would be to spend my time writing letters to them, and their time in answering them, when I can get the information so much easier and quicker, and all of us can devote our time to deciding important questions."

Strange indeed that a practice manifestly so unnecessary and unwise in the bank should on a railroad where the officers are separated by partitions, become at once reasonable and indispensable.

I am not unmindful of the fact that in a great many cases the man to whom an important question is addressed for adjustment, must, according to the plan of organization in effect on his line, refer it to another for attention. If it must needs be sent to him why dignify the transaction with a formal letter of transmittal which requires all the red tape that a really important communication deserves? Why not write his initials on the corner, and keep a memorandum showing where it went?

But in many cases it is extremely desirable that there be such change of organization as would place in one person the authority over more than one department, so that it would be unnecessary to refer most matters to others. There is no reason why a freight solicitor should not also solicit passengers, nor why a division superintendent should not be general manager of his division, and let all departments report to him. He is responsible for results. Why withhold from him the tools with which these results must be accomplished?

The question of whether the division or the department is the proper unit has able champions on both sides. But I think it is conceded that the trend of the times is in the direction of localizing authority and giving the man "on the ground" more power and discretion. Whenever you make it so that matters have to be referred to this place and that before a decision is arrived at, you create a system which demands a great amount of unnecessary work, dwarfs the natural initiative of the individual, saps vitality from the organization, and is distasteful to the public. And this, my friends, is the red tape in railroading.

That railroads need experts is conceded. But a man should not specialize to the point where he thinks, either consciously or unconsciously that the railroad is an adjunct to his department, rather than that his specialty exists as a part of a greater whole. And the most logical way of giving a man the proper perspective of the business is to give him such duties as will compel him to see that business from more than one angle. This cuts out the red tape which would have existed between the departments which he represents, and makes him a more efficient workman because of his better idea of the relation which his work bears to the whole.

This principle of broadening men is a very logical one. Some of our poorest paid employes are the broadest. Let me explain. Take the local agent at a one-man station. He is the representative of the operating, traffic, and accounting departments and must familiarize himself with the duties of each. He does this, in many cases remarkably well. When I was a traveling auditor, and thought I had a good "case" of violating the rules at some one-man station, the agent's defense would usually puncture my indictment as well as could a good many lawyers' briefs. I have the profoundest respect for the station agent. Yet he is supposed to be pretty well down the railroad ladder. Now if the local agent can prove himself an acceptable representative of three departments, why is it that men higher in the line than he are only thought capable of being charged with the duties of one?

But aside from the question of natural capacity, the reason why that agent must post himself along many lines is because the road cannot afford to keep a force of experts at every station. I maintain that the same argument applies all along the line, and that railroads to-day may increase their efficiency by combining certain departments at many points, and by encouraging every employe to take a broader view of the company's affairs, to look at the business in the same way that the president views it, and with the same idea in mind as had the automobile dealer who advertised "no limit to speed but the law," takes as their slogan, "no limit to my interest but my business."

Now some one is apt to inquire: "If you argue that it is logical for a man to qualify who is not an expert, how can you consistently criticise the representatives of governing bodies, commissions, etc., for acting upon matters that they know not of?"

To which I reply that it is one thing to deny to men outside the railway an intimate knowledge of its affairs, and quite another to say that a man in the railroad business cannot comprehend the duties of more than one department. A man without experience in a bank cannot be a paying teller or credit man, but because that is true, it does not follow that a man who DOES work in a bank is incapable of filling acceptably the offices of paying teller, receiving teller, bookkeeper and credit man. In the one case you have a man on the outside looking in—in the other a man on the inside looking around.

I sat one day at the feet of the second vice-president of the longest railway in the world. The conversation turned to a discussion of eucalyptus. "The roots go down thirty feet for water," said the vice-president. "They thrive only in certain thermal zones, such as Australia and Southern California. The commoner varieties are the blue gum, or globulus, the stringy bark, the peppermint and the cider. The trees grow to immense heights, exceeding the big trees of the Sequoia. We are using them for ties, with splendid results." He continued for a full half hour discoursing on the advantages of the eucalypti, manifesting an intimate knowledge of his subject. Now the fact of the matter was, he had under him a manager of tie and timber department who, as I read the other day, is an authority on wood preservation. Why, then, should the second vice-president undertake to post himself on the details of that department? Why not let the heads of departments run the railroad? There is not a single feature of railroad operation that could not be referred to some department, thus relieving the officer in whom all departments converge from interposing his own ideas in regard to anything. But that second vice-president knew, as all real "generals" know, that the ideal executive is the man who knows everything about something and something about everything. And he also realized that an administrative officer around whom the department heads assemble should be something more than a mere bumping post. He should be a centrifugal force radiating power and inspiration in all directions. My friends, you cannot make a broad man by training him along narrow lines, nor can a man who continually strives for departmental supremacy become, on his elevation to a generalship, a wide-gauge officer with the idea uppermost in his mind "my company, 'tis of thee." We must begin with the young men in railway service. Some roads already have inaugurated comprehensive courses of training. The handwriting on the wall shows that the next generation of railway officers will be those who succeed not in making their department predominate on their road, but in making their road predominate among its competitors.

Were I placed in charge of a railroad, I would appoint all of my employes "generals." Suggestions for improving the service would be welcomed regardless of the source from which they came. Instead of maintaining an organization where much of my energy would be devoted to promoting harmony between conflicting interests, and determining the line of cleavage between departments, I would charge them all with the responsibility of producing dividends, and we would meet as members of a common cabinet working for the general good.

I believe all railroad men want to see their companies prosper.

I believe we are anxious to increase our own effectiveness and the efficiency of the roads we love to operate.

I believe the most logical and natural method of accomplishing this is—on the employer's part, by making such changes in the organization and administration as will allow officers and employes to broaden the scope of authority without fear of criticism, and—on the employes' part, by taking a deeper interest in the company's affairs, each doing what he can do, and passing to others only those things that he conscientiously feels he cannot perform. Thus may we practically eliminate the expensive, useless, and vexatious red tape which now forms such a conspicuous part of all we do.

Little Economies in Railroading

(Taken from an article by G. E. Walsh, appearing in the *Sunday Magazine*.)

A station agent at a salary of sixty dollars a month had a record of wasting the company's money through carelessness or a run of bad luck. Freight consigned to or shipped from his point had a way of meeting accidents that caused a lot of damage suits. The man was cautioned, warned and finally peremptorily fired.

Another took his position, with a warning that he would meet a similar fate if he did not look after the company's interests with greater care. He made a two years' clean record. Then came a letter couched in these words:

"We cannot pay more than $900 at X. The business there will not warrant it. But we consider you worth more than $900 a year, and you are hereby transferred to W, with a salary of $1,200."

The station agent who mishandles a broom and wears it out beating the dog or using it for a baseball bat is the same man who roughly handles the freight and express packages and lays the foundation for endless damage suits. He also leaves the station with the drafts all turned on the stove so that it consumes twenty per cent more coal than is actually needed, and if by chance there is a wind blowing through the room it is his lamp chimneys that always are being cracked by it or blown off.

An employe can cost a railroad more than his wages amount to through failure to observe the rules of economy. A fireman, for instance, will pile the coal so high on his tender that many big lumps will be jolted off as the engine rounds sharp curves or jumps across switches. It doesn't take many big lumps of coal to make a hundred pounds, and every hundred pounds equals in cost the hauling of one ton of freight twenty miles.

An engineer can economize on oil in a way that will make a tremendous difference in the final cost to the road. A gallon of engine oil equals in cost the hauling of a ton of freight fifty miles; a gallon of car oil thirty miles; and a gallon of valve oil ninety miles. "How many gallons can you save a year?" is the question put up to the engineers.

Trifles begin to assume the importance of big things when you multiply them enough times. A gallon of oil or a shovelful of coal saved here and there will soon pay the wages of an extra man. Fifty shovels of coal used unnecessarily on a trip means that the company will have to haul an extra ton of freight two hundred miles to pay for it.

An engineer can rough-handle his engine so that he will not only waste steam, and hence fuel, but he can jolt and jar the locomotive so that the mechanism will soon give out. Rewards are today offered on a dozen different roads to engineers and firemen who make their regular trips on a minimum supply of coal and oil. This policy of encouraging economy has resulted in enormous savings.

"We have cut down our fuel consumption on regular train trips twenty per cent in the last two years," stated the division superintendent of one road, "through a system of penalties and rewards. The average amount of both fuel and oil we take for the standard has been worked out carefully. A maximum of ten per cent over this amount is allowed for each locomotive. If more than this maximum is used the engineer or fireman or both are fined unless good reasons, such as delay and accidents, can be given. For anything less than the average used on each trip the engineer and fireman get credit. If they save more than ten per cent of the standard amount, they receive fifty per cent of the cost of the fuel saved. In the course of several hundred trips made in a year these rewards sometimes amount to considerable for the men. They appreciate it and work accordingly."

An engineer who is careless in starting and stopping, easily may break the air hose in time, and the cost of that equals hauling a ton of freight two hundred and twenty-five miles. A broken drawbar knuckle equals hauling one ton of freight three hundred miles, and a fireman's lost shovel means hauling a ton ninety miles to pay for it.

The economy bug is carried into every department of the road, and trackwalkers, switchmen, yardmasters and shop workers are brought under the new system. Trackmen and switchmen are warned that lanterns must be handled with greater care. A white lantern globe equals in cost the hauling of a ton of freight twenty miles; a red lantern globe, seventy-five miles; and a complete lantern, one hundred miles. Even a pound of waste for wiping engines and switch locks is worth ten and a half miles of freight haulage.

The yardmaster and yardmen are responsible for a lot of losses that formerly were overlooked. The cost of a freight car belonging to another railroad is from thirty to thirty-five cents a day when held unduly. Railroad economy as well as railroad efficiency demands that all cars shall be dispatched to their destinations as quickly as possible, unloaded and returned to their owners. The system of handling these foreign cars differs on the various roads. Some apparently have no system, or at best a very clumsy and involved one.

Years ago, through lack of system, many freight cars had the disagreeable habit of disappearing for long periods, and the different roads had to employ car tracers to hunt them up. Some roads, either intentionally or through lack of system, retained borrowed cars indefinitely and then sent them back home by the longest route.

There were car runaways or wanderers in those days which traveled several thousand miles before they finally reached home again. One such freight car, known as No. 6184, left its home on February 22, 1893, and wandered almost continuously until March 3, 1895, when it at last rolled into its home shed. Car tracers had chased it over a good part of the United States, and more than once it had been started homeward; but it managed to get away again, and during its wanderings it visited nearly all the principal cities of the country. It was estimated by the owners that it had traveled over twenty thousand miles and had carried all sorts of merchandise and provisions—wheat from the prairies of the Northwest, corn from the fields of the Mississippi Valley, melons and oranges from the South, Oregon and Washington apples from the far Northwest, manufactured articles from New England mills, and mineral products from the mines of half a dozen states.

In those days the roads charged one another six-tenths of a cent a mile of distance traveled as rental for common freight cars and three quarters of a cent for refrigerator cars. This charge was really so small that railroads equipped with an insufficiency of cars found it more profitable to retain foreign cars than to buy new ones for themselves.

This old system has been abolished, however, and cars must be returned as soon as unloaded. So now the foreign car question is a fruitful source of loss to the railroads if they are not handled properly and efficiently. Costing the road thirty to thirty-five cents a day, it means money to the company to unload and send them back quickly.

Yardmasters and yardmen find their chief source of saving to the company in making up the freight trains so there will be a minimum of handling after they leave the yards. Every unnecessary switching of a train to sidetrack a few cars or to get a single one out of the middle of a train means the loss of fuel sufficient to pay for the haulage of a ton twenty miles. The yardmaster thus is held responsible for these unnecessary delays. Besides the loss of time and waste of fuel, unnecessary switching causes wear and tear on the track and train mechanism that amounts to thousands of dollars a year.

The rough handling of freight by trainmen and employes at terminals results in the loss of tens of thousands of dollars every year. Damage claims and suits have become so numerous that the railroads have had to combine to combat the evil.

More than a year ago, when the economy idea began first to make itself felt on some of our railroads, the president of the Missouri Pacific issued orders to the New York offices to give up their private telephone wires to St. Louis. Why? "There was altogether too much unnecessary talking going on over the wires." He figured that he could save several thousand dollars a year to his road if this convenient method of sending messages to St. Louis was cut off. A lot of messages were despatched over the wires that should have gone by mail. It was easier to talk in a telephone than to write a letter.

Six other roads at about the same time issued orders to their telegraphers to cut their messages to the minimum. This order perhaps saved a million words a year sent over the wires. Special penalties were fixed for delays in not coming in promptly on wires when called. This greatly reduced the delays in handling trains.

Down in the passenger and ticket departments the ruthless hand of the economizer went, and before it was through a lot of duplicate pasteboard used for tickets was confiscated. There was such a multiplicity of forms and tickets in use on some roads that it took most of the time of a private printing establishment to print them.

On a single branch line there were six hundred different styles of printed railroad tickets, and on the main system upward of ten thousand. Most of the big roads had as high as five thousand standard forms of tickets, with any number of special forms to be printed from week to week. Every excursion, special train or convention gathering meant the printing of a lot of new special tickets.

Simplified tickets have supplanted many of these old duplicate and intricate forms, and many of the roads are adopting machines that, working somewhat on the principle of the cash register, will stamp and date tickets in indelible ink and give the destination just as plainly as if printed.

One big road whose ticket-printing bill was over fifty thousand dollars three years ago reduced it to thirty thousand dollars last year through these economy methods. Another had its annual bill of forty thousand dollars for tickets cut to twenty-eight thousand. A lot of expense of railroading is still wrapped up in red tape that costs the roads thousands of dollars. An elastic rate sheet would be a wonderful boon to the railroads. Some expert accountant may one of these days work out such a thing and save the companies huge annual sums.

When an elaborate and cumbersome rate sheet is made out and tens of thousands of them are printed and distributed, a change in the rates of some connecting road may make it almost worthless. The whole thing must be worked out and reconstructed to meet the new rates. The printing and reprinting of these sheets cost a lot of money, and the roads are trying to find some way of reducing it.

There are one million seven hundred thousand persons employed on all the railroads of the United States, with total annual wages and salaries of twelve hundred million dollars. If each one saved a nickel a day for his company the amount would reach eighty-five thousand dollars a day, or a trifle over thirty-one millions a year.

Operating expenses for the roads in 1910 were $1,823,000,000, and in 1911 had increased to $1,915,000,000, an increase of $92,000,000. For subsequent years operating expenses have shown still further increases. After making allowances for increased mileage, this increase in expenses was large enough to make one think seriously. Yet if the employes each would save a dime a day for the roads the increase would be wiped out.

How to Systematize a Railway Office

BY C. S. HUNSINGER.

EDITOR'S NOTE:—The following article by a Pennsylvania Railroad station agent of long experience describes seventy-four practical short cuts and systems which have been tried out and found effective in saving time and producing greater efficiency. While these may not all apply to all stations, they constitute a most complete and detailed statement covering systematized station work and should prove a valuable assistance to all those who desire to produce a higher efficiency in work of this charatcer.

RAILWAY officials have given but little attention to the efficiency of their clerical forces until the last few years. Lack of literature and organization have been responsible for this delay, but the office men are now coming into their own.

These conditions have been due to the low wage, inadequate assistance and long hours of these positions, but railroad companies are offering improved conditions each year and it is now up to the desk men to make good. This can be accomplished by the study and practice of system—the modern qualification of business, which is essential to the success of every office employe.

Before an agent or assistant can expect promotion he should be able to handle all the numerous details of his position with precision and despatch, complete each task before passing it on, keep his desk entirely free of all dead material and check up the work at night and satisfy himself that he has overlooked no promise and forgotten no task.

System does not mean a lot of cards, records and other imaginative red tape but denotes shorter and more efficient ways of getting the work done right and on time. This ability however depends altogether on the man himself and can only be learned by practice, beginning with system in the little things. By using the following short-cuts and systems which have been tried out in one of the most systematic railway offices in the United States, any desk man can obtain a splendid start in real efficiency.

No matter how inconvenient an office is, it can be made one of the most modern and systematic with but little expense and a small outlay of time. The first rule of system is classification—a right place for the right thing. Take everything out of the desk or stationery cabinet and classify the contents into six piles. In the first pile put the working tools, such as pins, ruler pencils, etc. In the second the report forms and other papers used several times each day such as way-bills, bills-of-lading, etc. The daily report blanks in the third, the weekly reports and forms used occasionally in the fourth, the monthly report blanks and forms used once in a while in the fifth and in the sixth throw all the articles that cannot be included in the above classification. While everything is out of the drawers it is a good idea to clean them carefully for neatness is one of the necessary principles of system.

Then select the most convenient place in the desk for the articles in the first pile. In the next handiest drawer put the forms in the second pile and so on until a regular place is established for everything in the entire office. If these things are always kept in their respective places they can always belocated readily. After a special place is decided for everything it is a good plan to make out an index to use until accustomed to the changes.

Some of the smaller stations are equipped with only a common table for a desk. In these cases it is necessary ta study out original schemes and places to keep the many report forms and other material but with a little time and patence it is possible to make even the most inconvenient office a model.

It has been found that the only really necessary articles on top of the desk are: one inkwell for writing fluid, one for copying ink and another for red, if it is used more than once every two or three days. Many agents only use the red fluid once a week or so and in these cases it is well to keep the pen and ink in some other place. Two or three penholders and pencils in a convenient pen rack, blotter, paper weight, desk pad, two letter trays, scratch pad and an office tickler (as suggested below) complete the equipment for the top of the office man's work bench.

In the most convenient drawer of the desk make several small compartments suitable for rubber bands, paper clips and pins. IIn a larger division keep a rubber eraser, scissors, pencil sharpener, a few extra pens and pencils, ruler, letter opener an dany other tools that are used many times daily. It would be fifteen minutes' study well spent to find the most convenient place to keep the pen pencils and blotters that are picked up twenty or more times each day.

Every station agent should have a desk tickler in constant use on account of the numerous details that he is supposed to remember. There are several different styles of desk reminders on the market but a small box file, fitted with a weekly or a monthly card index is the most practical for railway offices. Any work, promises or appointments that an agent wishes to remember several days or weeks later will be brought to his attention on the desired day by simply making a notation on a small piece of paper and slipping it behind the card of the desired date. On the morning of that day the card will bring the matter to his attention. It is well to carry a note-book around in the pocket to jot down things thought of while away from the office. It can then be filed in the tickler with the assurance that it will not be forgotten. A person will soon learn to depend on this convenience instead of burdening the memory with numerous details.

Eight or ten blank guide cards are sometimes placed in the tickler to file information of various kinds. One of the division guides can be labeled "Requisitions" where a current list of needed supplies can be kept. Make up a list of the class and commodity rates to principal stations and file either under a general "Freight" guide card or under the special commodity name such as: "Grain," "Stone," "Baled Hay," etc. A State rate telegraph card, express rate scales, a list of the passenger connections mostly inquired about, the more important percentages and routes and a revised list of embargoes affecting the different commodities can be conveniently filed in the tickler.

A common box letter file makes a very suitable hold-over file in which to keep correspondence to be held for further information or consideration, circular letters, claim papers, corrections and matters to take up with officials, assistants and other agents. File all the papers in the lowest division of the file as soon as settled, until the end of the month when they should be taken out and filed with the other monthly records. It should be indexed so the contents can be located readily.

Nearly all agents dislike to make out requisitions. Here is an effective plan to overcome this drudgery satisfactorily. Place small slips of colored paper in with the various forms, leaving an ample number of blanks under the slips to last until the next requisition arrives. Whenever a colored slip comes to the top simply make a note of it and file the list in the tickler. In this way an accurate order can be copied from this list, thus saving the handling of all the forms each time.

Where billing machines are used a list of the six class and principal commodity rates with routes, percentages, etc., can be placed in a small frame, covered with glass and suspended from the ceiling, directly over the typewriter. A small spring or two foot rubber band is generally used on the bottom of the suspended string so the frame will be drawn out of the way when not in use.

Two wire or wooden letter trays about 9 by 15 inches in size placed on the desk are conveniences that no office should be without. Have it understood in the office that all in-coming matter is to be placed in one tray and all out-going matter in the other. In this way there is less liability of any paper being overlooked or mislaid and the saving in time is very noticeable. Aim to keep the incoming tray empty. Some agents find that time can be saved by placing all work in the out-going tray as soon as it is finished and near the close of the day an assistant can enclose the letters and reports in envelopes and file the other matter in its proper place.

If there are a dozen or more letters to seal, spread them on the desk in regular order and wet the mucilage with a sponge. They can then be sealed with but a few movements.

Make a note of all the freight claims in suspense in the weekly tickler and use the follow-up system to secure prompt replies.

Keep a small card in the money drawer and get into the habit of making a note of all the amounts taken out, the amounts due and a list of miscellaneous collections. It will save a great deal of nervous figuring in checking up.

Cut off the top corner of the carbons in the bill of lading and expense bill books. This scheme will aid considerably in taking the carbons out as it is only necessary to grip the pad at the corner, shake lightly and they will drop out readily.

An agent handles his bunch of keys many times a day. If the keys used mostly are arranged so they can be found the quickest it will save a great real of unnecessary fingering.

Have the assistant stamp a sufficient number of report blanks, card bills, envelopes, etc., with the station name, division, signature of agent, etc., to last several weeks.

Attach a gummed tab or a paper clip to the top or bottom of the current pages of the account books or cut a small corner off of eacr page as it is used, to assist in locating the current page quickly.

Keep a note book or pad of clip at the business window to jot down information while talking to patrons.

It is a good scheme to keep carbon paper with all the blanks that it is necessary to take copies of. Also keep an extra carbon in a convenient place for miscellaneous copying.

If there are no printed envelopes to officials or agents to whom it is necessary to write often, have the clerk or office boy address fifty or more envelopes in advance.

Bend up one end or corner of the blotters so they can be picked up readily. Large blotters are generally a nuisance. The 3 by 6 size is the handiest.

Have a clerk make out fifty or more trial balance sheets similar to the following outline and a check of the cash can be made in a few minutes: On the debit side itemize the receipts of the office like this:

Telegrams, C. O. D. Collections, Money Order Sales ,Express Collected and Prepaid, Freight Collected, Ticket Sales, Balance, etc. On the credit side name all the denominations of cash in this way to prevent mistakes: Bills Dollars, Half-Dollars, Quarters, Dimes, Nickles, Pennies, Checks, Vouchers, Remitted, etc. File the reports until the end of the month. Check up every day and errors can be located readily. Instead of adding up the entire columns in the cash and ticket books each day add the amount of cash taken in each day to the previous total. These figures can then be copied on the trial balance sheets.

Instead of keeping train order blanks etc., on the desk or hung on the wall, make a small wooden cabinet with a special compartment for each order form, one for message paper, clearance cards and train registers and place under the telegraph desk. A file hook placed on each side can be used for messages and train orders.

In busy baggage offices it is a convenient plan to place the blank checks in the brass shells, ready to be attached to trunks. In this way they can be easily addressed and the duplicate torn off for the patron in a hurry.

To take quick impression copies place a piece of blotting paper under the leaf of tissue instead of using the common oil board, then with a brush or rag, wet the leaf thoroughly. Take off the surplus water with another piece of blotting paper, then place the written letter on the leaf, place in the press and in ten or fifteen seconds a perfect copy will be secured. To copy typewritten letters the leaves require more moisture than they do to copy letters written with pen and ink. This quick system will come in handy many times when quick legible copies are required.

Get rubber stamps for all notations used frequently. The following is a comprehensive list for the average station: Duplicate, Please Rush, Second Notice, Prepaid, Void, Shippers Load and Count, Way-Bills, State, Interstate, Thank You, Weigh and Correct, Allow Inspection without Unloading Lightterage Free, Received in Bad Order, Nothing to Report, O. K. Entered, Paid, a dating stamp, Autograph Stamp of the Agent's signature, a Received dating stamp and the names of stations mostly used. Label and keep in a stamp rack in a convenient drawer on the desk. The stamp pad can be kept there also.

It has been found best to keep records three months old and less separate from the older records as it is generally necessary to refer to these records occasionally and if mixed with other records, they are difficult to locate.

A very effective way to keep tissue paper from blowing about is to double the pad on a stick, hung on the wall. Tie a string over the lower edge of the pad, adjusting it so the paper can be slipped out easily, yet will not be blown away.

A very economical copy holder for typewriting can be made by hanging a common board clip on a nail just back of the typewriter.

During the study of system pay close attention to the arrangements of the desks and cabinets in the office. Maybe other positions would be more convenient.

Keep a blotter in all the books where ink is used. It is astonishing how much time is wasted in keeping track of the blotters.

A great amount of time is wasted in telegraphing. Be as brief as possible and a good reputation will be established which will be appreciated by the despatchers and other busy operators.

Some agents have found that by assembling all the monthly reports together and arranging them according to the dates they are to be sent in, they seldom miss a report.

To avoid forgetting messages, mail, etc., it is a good plan to have four separate and handy mail boxes; two for passenger trains in each direction and two for local freights.

A good fountain pen is a time saving office appliance for busy station agents. Count the number of times the pen is dipped in the ink well and the result will be surprising.

Post a local time table in the waiting room for the convenience of passengers and it will save the answering of many questions. Place a division time card on the tickler also.

A ticket agent is many times asked the distance between local points. Place the number of miles on the ticket rate card near the window and the annoying questions can be answered promptly.

Make use of the principles of system in arranging the tickets in the case. It is generally best to arrange them in geographical order.

Make a complete index of all the forms in the office, stating just where everything can be found.

Do not allow matters that will be referred to but once a month interfere with date consulted but once a day. If there are any torn or fly-specked papers about the office either make copies of them or burn the old ones.

The most convenient place to keep the troublesome needle is in a small tin box with a small hole in the top or side. The spool of thread can be kept there also and the thread pulled through as needed.

In filing monthly records tie them with a string and mark on a shipping tag the name of the record, the month and year. Make a yearly index of the file record case. This will enable a person to locate any record readily.

It does not take a great deal of practice to be able to use the left hand in writing short notations and in telegraphing and will prove a valuable accomplishment.

Place a pen and pencil rack over each desk where writing is done.

Before using a new pen, remove the grease which always covers new ones with a small cloth and a little pinch of cigar ashes. It will then write like a new pen from the start.

Make out a list of the weekly reports due on a card and file it in the desk tickler from the 7th to 14th, then to 21st, and so on. Other periodical reports and work can also be brought to the attention in this way.

Make a list of the telephone numbers mostly used and keep in the tickler or near the telephone.

Have a general house cleaning once a month and the office will be a tidy one.

Learn to use the typewriter by a standard touch system.

Learn to concentrate the mind. It is a rare accomplishment.

Divide the day's work: errands to office boy, routine to the clerk and the vital work for the boss.

Keep a calendar of the preceding and succeeding months in a place where it can be referred to easily.

Aim to keep the work up to date and the desk cleared for action.

Do not invite or encourage visitors to come to the office.

Mark down all the errors that are made each day and refer to the list occasionally. Everybody makes mistakes but efficient men do not repeat them.

Real personal efficiency is to save time and then more important of all is to use the spare minutes to advantage.

Through Routes for Chicago's Steam Railroads

Note: There are strenuous times ahead for the railways. The Interstate Commerce Commission's virtual denial of the right of railways in official classification territory to advance their freight rates five per cent., has left them without adequate means to increase their revenue sufficiently to meet the demands of a growing commerce. The Commission's decision, while woefully lacking in any immediate measure of relief, is, like most Government documents, full of gratuitous suggestions by which it is evidently hoped that the carriers' may improve their financial condition. One of these suggestions refers to passenger rates which, it is evident, in the opinion of the Commission, are in many instances, below what they should be in order to provide a proper compensation for the services rendered. In view of this attitude, the following extracts taken from a recent publication of the City Club, of Chicago, entitled "Through Routes for Chicago's Steam Railroads," will prove of interest to passenger traffic officials as well as those who are more directly interested in general financial results. This publication which is by George Elsworth Hooker, civic secretary of the City Club of Chicago, has been prepared for the purpose of setting forth Chicago's urgent need for better means of fast and comfortable local travel, which, it is held, should be largely met by the steam railways operating to and from that city. The author states, as his belief, that a properly designed and operated system of through routes for local travel on the steam lines would constitute, from a broad city planning standpoint, the most efficient trunk factor for a logical trunk-and-feeder scheme of passenger travel for the entire city and its suburbs, and would yield more accommodation in rapid transit for the same outlay than would be secured in any other way. The following paragraphs constitute an outline of the plan as developed by Mr. Hooker:

THE following figures have been secured from reliable sources as to the number of local railway passengers per year in Chicago and the approximate speeds at which they travel—the average speeds for the "Elevated" and steam lines being obtained by combining their respective local and express schedules.

Street railway passengers (excluding transfers) 600,000,000, average speed—9 miles per hour.

"Elevated" railway passengers 164,000,000, average speed—14 miles per hour.

Steam railway passengers (approximately) 41,500,000, average speed—24 miles per hour.

The street cars of Chicago, if operated at a speed appropriate for long hauls, become dangerous, deluge people with dust and deafen them with noise—in short, become inappropriate for the public streets. The elevated electric lines are faster than the street railways, but are slower and ramify less widely than the steam lines. For a considerable fraction of the 600 million street railway passengers and the 164 million elevated railway passengers the crowding is nothing less than a disgrace to the community. A very great number of those passengers also suffer a constant and enormous waste of time—as compared with steam travel—by using those facilities for long haul journeys.

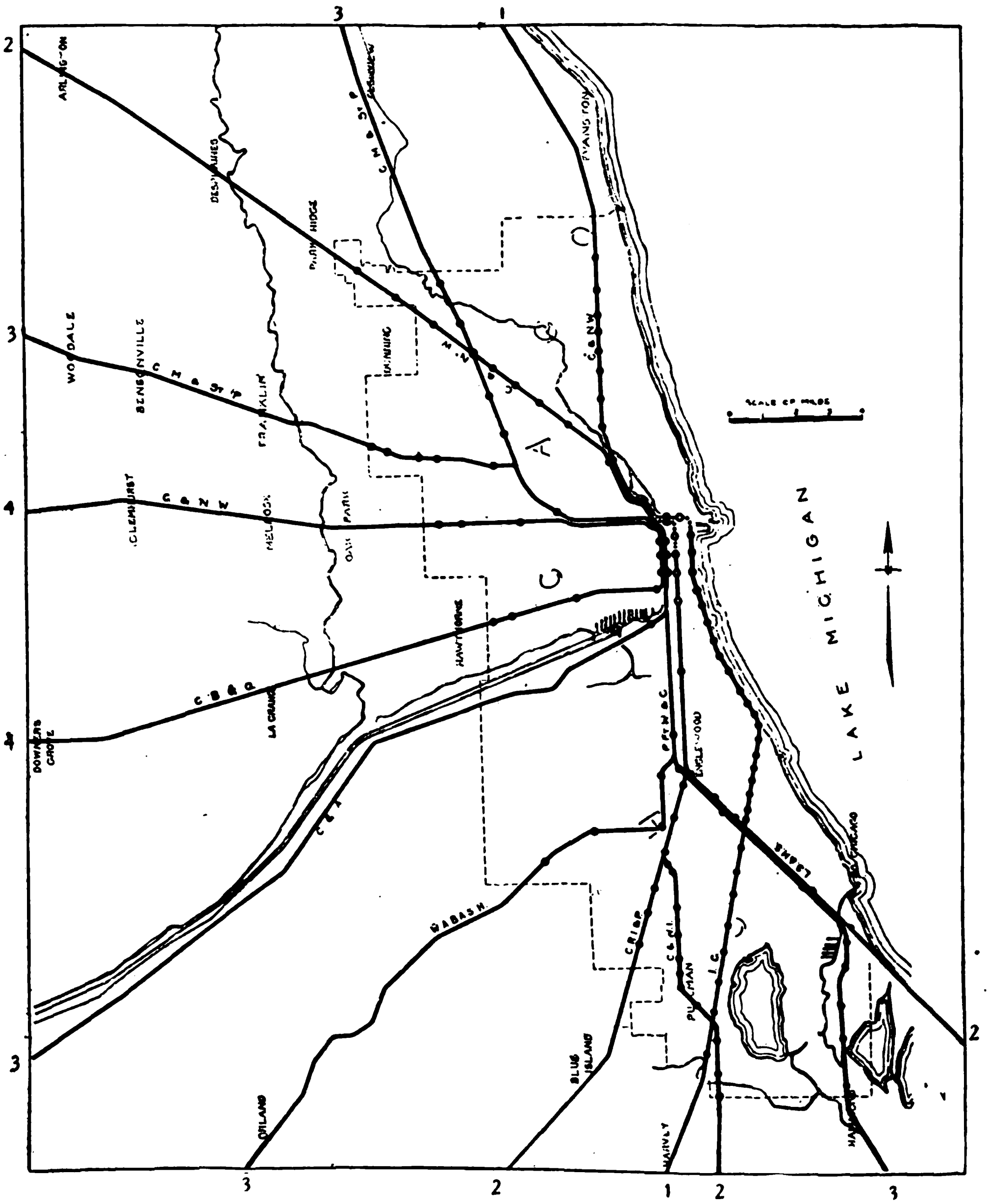
It is, therefore, the steam railroads of Chicago—presumably soon to be electrified—which alone represent the speed and comfort appropriate for the long journeys so characteristic of the local travel of this diffused community. Yet only 1-20th of all the local passengers in Chicago enjoy that standard of travel. Despite the steady and rapid increase of the population of the city, and despite the fact that the number of street railway passengers has doubled within the last eleven years, the steam lines are not greatly increasing their *local passenger service*, and have not been doing so for years nor do their managers promise any important future increase. The steam railways in Greater Berlin—which include a great east and west four-track through route—carry eight times as many local passengers as do those in Greater Chicago.

It is the meagreness of local high speed travel by rail which in part at least explains the thousands of automobiles parked daily in the downtown streets. The space demands per passenger, however, of the automobile, whether moving or standing, are so great that no policy would be justified which would compel or even permit it to become a general means of travel to and from the ever-thickening business center. If it became such, all other vehicles would, from sheer lack of room for them, have to be put off the surface of the streets.

Nor will subways in the central district—facilitating increased speed for a short distance only—meet the case. Moreover, a subway system extending over the whole city, even if it reached the speed of the steam lines, would be enormously costly as compared to the expense of developing for local traffic, steam lines already existing, and would be open to the serious objections which attach permanently to underground travel. The steam lines should be more extensively utilized for fast travel.

To secure such utilization of the steam lines, however, they must be linked up into through routes—continuous from one side of the city, through the business center or through other important centers or districts, to another side. Passengers using a given through steam route could then ride *without change* from any station on one side of the city to any station on another side, or —on the downtown routes—to any of several stations which would presumably be established in the business district. Few would ride from one end of a through route to the other, but many would ride from one side of the city or of the business district to another side; and many would be convenienced by a choice between *several* different stations on each line in that district, where now they have but one.

With through routes thus operated, a logical system of surface feeder lines, crossing them at their various central, as well as outlying stations, could likewise be developed, so that a passenger starting at any point in the city or its environs could be certain of getting conveniently to or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ARLINGTON
DESPLAINES
PARK RIDGE
C M & St P
EVANSTON
C & N W
WOODALE
BENSONVILLE
C M & St P
FRANKLIN
ELMHURST
C & N W
MELROSE
OAK PARK
C B & Q
LA GRANGE
DOWNERS GROVE
HAWTHORNE
SCALE OF MILES
LAKE MICHIGAN
P F W & C
ENGLEWOOD
L S & M S
SO. CHICAGO
WABASH
CRISP
C & E I
PULLMAN
I C
BLUE ISLAND
ORLAND
HARVEY
HAMMOND

MAP OF CHICAGO SHOWING POSSIBLE THROUGH STEAM ROUTES SUGGESTED BY BION J. ARNOLD, 1914

KEY

———Existing steam railway. - - - - -Chicago city limits, 1914. ○ Proposed new station.

. . . . . .Proposed subway connection. ● Existing station.

The four through routes, including branches, are identified by their respective numerals on the margin of the map.

near his ultimate destination, and of having the maximum opportunity to use the highest speed service.

Thus, through steam routes, properly fed by street railways, would actually give all parts of Greater Chicago rapid and convenient communication with each other. With few exceptions our characteristic long journeys could then be readily made in part or in whole on the swift and comfortable steam lines. With the exception, too, of such downtown sections of these lines as might possibly be placed in short subways, this high speed travel would be entirely above ground.

The stub-end steam terminal involves a great amount of excess trackage in its train shed and adjacent yard for reverse train movements and for cars waiting in the train shed longer than is necessary for loading and unloading. Its consequent great width necessitates correspondingly long subways or viaducts for the streets crossed. The through-route station need be perhaps only one half or one third as wide at street crossings as the stub-end terminal. By such stations for example, the street subways under the new Northwestern and the Rock Island terminals might be shortened perhaps one half or more. The cost of these terminals would also be correspondingly reduced.

The establishment of through steam routes, each with several stations in the business district, would remove a powerful pressure against the natural growth of that district.

The great majority of the 100,000 passengers into, and then out of, the downtown steam terminals daily, are destined for points widely scattered throughout the business area. Yet no passenger, save on the Illinois Central suburban service, has any option as to the place of leaving or taking his train. Since most passengers, however, would be adverse to spending an extra fare for street car or to spending more than ten or fifteen minutes walking between station and downtown destination, terminal routing is always tending to limit the business district to an area every part of which can be reached from every steam terminal, by walking, within ten or fifteen minutes.

The buisness district can never expand naturally until freed, not alone from the barricading effect of the surrounding steam railroad property, but also from the compression of the "Little Chicago" plan of steam railroad routing.

The through-route principle for urban transportation has been rapidly winning its way in modern cities respecting elevated and underground and, especially, street car lines. Chicago has adopted it for elevated and street railways. Despite peculiar difficulties, the principle has also been applied in a number of cities, and with conspicuous success, to steam lines. It is being applied to steam lines in several notable instances at the present time, and its application to steam lines has been officially recommended as the only satisfactory solution in other important instances.

Through routing on the steam lines of Chicago is recommended by Mr. Bion J. Arnold in his recent Chicago Railway Terminal Report, and he has suggested a tentative scheme of routes for carrying this out as indicated by the accompanying diagram. This scheme would employ properties already existing and would involve only a limited additional investment.

Electrified as they presumably will be in due course, amplified where necessary by additional tracks alongside, linked up into through routes, and properly crossed at stations by surface feeder lines, the steam lines should constitute a trunk system of popular, safe, comfortable, sun-lit and *rapid* travel throughout Greater Chicago.

At the present time the terminals of these railways are not even situated so that direct or even practicable transfers can take place between them for local travel. They are instead planted at arbitrary points distant from an eighth of a mile to a mile and an eighth from each other. These terminals also illustrate the same grave objections which attach to such terminals generally: they are inefficient for local transportation; they waste space, interfere with streets, cost extravagant sums, congest business, and distort city growth.

Not a through steam route exists in Chicago. The plan at the right shows the six arbitrarily located and disconnected downtown terminals at which Chicago's steam passenger lines for local as well as long-distance service now end.

This plan makes it plain why the passenger business of these lines, although they represent the highest standard of speed in Chicago, and although Chicago distances demand that speed, is so conspicuously small. It is chiefly because they are operated on the terminal instead of the through-route plan. No passenger can ride through and beyond the central district, or—save on the Illinois Central—choose between more points of arrival than one in that district. This lack of continuity is fatal to any large development of local passenger traffic on the steam lines.

The necessity of replacing terminals and terminal routes on these lines by through stations and through routes is further enforced by many objections inherent in steam line terminals irrespective of their location with reference to each other.

Local passenger service on the steam lines of Chicago has not increased in recent years in due proportion to the increases on other railways. Some of the steam railroads have closed local stations and taken off local trains, saying they do not pay. Railroad managers may also be heard to say that they would gladly discontinue the suburban service which they now maintain.

If the steam railroads find their local passenger service insufficiently remunerative, a reason is not far to seek. The "Elevated" and street car lines give each passenger the option of from 10 to 40 different stops in the business area (bounded by 22d street, Michigan boulevard, Chicago avenue and Halsted street), while most steam trains stop therein at one arbitrary point only. The street car and "Elevated" lines carry their passengers from one division of the city to another by through cars or direct transfer, while the steam lines offer their passengers neither through cars, convenient inter-station service, nor even connecting trains. It is inevitable, under these circumstances, that the steam lines should lose traffic.

Roughly speaking, there are three kinds of local passenger business which the steam lines should handle, namely:

1. Traffic to and from the small congested kernel of the business district.
2. Traffic to and from the surrounding portions of that district—portions less congested but more extensive, and fast filling up with business.
3. Traffic not destined for any part of that district, but taking place between points in one and points in another of the three great geographical divisions of the city, or their adjacent suburbs.

The steam lines now handle—and with terminal routing can handle—only the first of these three classes of traffic. If they would install through-routing, they could handle the other two classes also.

Through routes on Chicago's steam lines would benefit the railroads themselves, would greatly increase the means and rapidity of local travel, would aid the central as well as the outer portions of the city, and would in many other ways serve the welfare of the people.

Through routes would aid the railroads by eliminating reverse train movements in central stations, by lessening thus the number of station tracks required, by reducing in this way the size and cost of stations, by rendering the latter admissible thus at central locations, by inter-changing coach yards and so minimizing waste mileage to and from them, and by introducing a new era of development for the local passenger business of the steam lines. They would also aid the railroads by feeding long distance traffic and by smoothing the way for through-routing long distance trains where desired. They would, furthermore, accomplish all these various benefits by employing, in the main, existing facilities, easily capable of much more extensive use and requiring a smaller new investment than any other scheme of equal promise.

If railroad presidents will seek their monuments in the local development of our cities, rather than in pretentious architectural piles—surrounded, perhaps, by ugliness—and if the steam lines will accordingly put their speed at the service of the public on an up-to-date scheme of routing, local passenger traffic on those lines will assume entirely different proportions.

Through routes would vastly increase the means and the convenience of travel. By providing a few comparatively short links, they would bring into more intensive use for local passenger service, and on a new and comprehensive plan, an entire system of existing lines of the highest speed, ramifying throughout Chicago and into the surrounding country. By enabling passengers to ride from one of these lines to another without change, and also to transfer at junction points, they would more than double the number of different possible continuous trips or direct transfer trips, from one station to another station on Chicago's existing steam lines. They would abolish the awkward hiatus in steam travel at the business center, by reason of which it is now impracticable to use the steam lines for cross-town journeys, and would reduce thus by from 20 per cent to 50 per cent the time required for a considerable portion of such journeys.

They would make it possible for a much larger proportion than at present of the entire travel of Chicago to proceed at the steam line speed. They would effect thus an enormous saving of time to the community, while reducing also the excuses for overcrowded and dangerously speeded street cars. They would secure the maximum convenience for doing business in any part of Chicago, irrespective of one's residence.

Through routes would aid the business district. By lessening the width of stations they would economize downtown space and reduce the length of subways under or viaducts over trainsheds and yards. By furnishing more express travel they would tend to lessen the congestion from automobiles in downtown streets, and by bringing passengers nearer their destinations by means of additional central stations they would tend to relieve the congestion of downtown sidewalks. Through routes would benefit the territory next beyond the business district. They would release that district from the compression of terminal routing, and, through the additional downtown stops, distribute business over a wider central zone.

Through routes would benefit all Chicago, city and suburbs. Being continuous routes, traversing the business area and also stretching beyond the city limits, they would afford convenient and speedy intercommunication between different parts of the city, between all parts of the city and all parts of the suburbs, and between the different suburbs themselves. They would serve and tend to build up all of Greater Chicago.

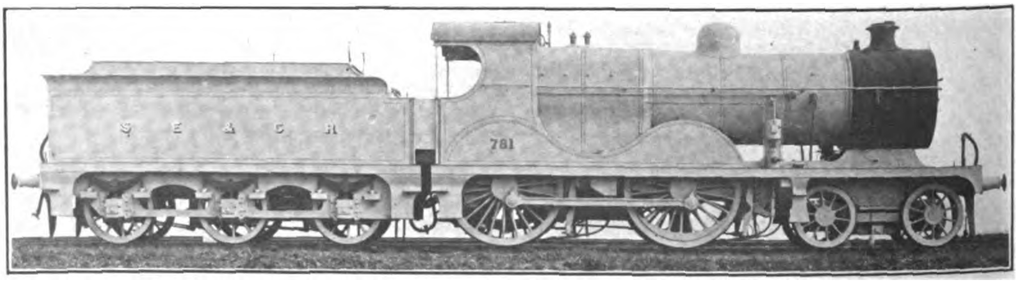
Railway Developments in Europe

NOTE:—For more than two years the RAILWAY WORLD has been publishing a monthly article from its London Correspondent relative to railway developments in Europe. These have been found of considerable interest, as numerous letters received from subscribers indicate. Owing to the state of war which now exists in Europe, however, it may be found necessary, after the current issue, to suspend the publication of these articles, until peace has been re-established.

Germany Builds New British Passenger Expresses.

THE first instalment of the new and heavier type express engines Nos. 772 to 781 recently ordered to the design of R. E. L. Maunsell, the chief mechanical engineer of the South Eastern and Chatham Railway of England, from A. Borsig of Tegel, Berlin, have now been put into service. The accompanying photograph and weight diagram illustrate these engines, which are of the 4-4-0 type with inside cylinders and are fitted with Schmidt superheater, having a draught retarder instead of the usual damper arrangements. They have the company's standard equipment of steam reverse gear, bogie, &c., and the principal dimensions are as follows:

Boiler.—Barrel diameter 5 feet: length 11 feet 5 inches; firebox width shell 4 feet ½ inch; length shell 7 feet 5 inches; tubes 1¾ outside diameter 16 9inches: 5¼ outside diameter 21 inches; heating surface, firebox 160 square feet, tubes 1,252 square feet; total 1.412 square feet. 21 element Schmidt superheater 319 square feet;. grate area 22.5



NEW EXPRESS ENGINE BUILT FOR SOUTH EASTERN AND CHATHAM RAILWAY OF ENGLAND, BY A. BORSIG, OF TEGEL, BERLIN, AND RECENTLY PUT INTO SERVICE.

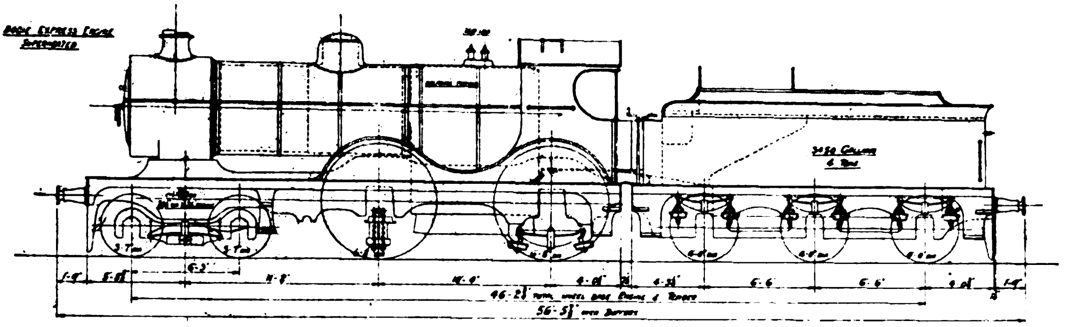

Bogie Express Engine Superheated
3450 Gallons
4 Tons
3-7 dia
6-3
11-8
10-0
6-6
46-2¾ total wheel base engine & tender
56-5⅞ over buffers

Diagram of New Express Engine of the South Eastern and Chatham Railway.

square feet. Working pressure 160 pounds per square inch.

Cylinders.—20½ inches diameter by 26-inch stroke; piston valve 9 inches diameter.

Wheels.—Bogie 3 feet 7 inches diameter; coupled 6 feet 8 inches diameter; traction power at 80 per cent boiler pressure 17,472 pounds; weight on coupled wheels 84,448 pounds.

Tender.—Wheels 4-0; capacity—water 3,450 gallons, coal 8,960 pounds.

Total wheel base of engine and tender 46 feet 2¾ inches.

Total length over buffers engine and tender 56 feet 5⅞ inches.

Weight in working order.—Engine bogie 44,240 pounds, driving 43,120 pounds, trailing 41,328 pounds, total 128,688 pounds; tender leading 30,240 pounds, middle 29,792 pounds, trailing 30,240 pounds, total 90,272 pounds; total engine and tender 218,960 pounds.

Great Eastern's New Tank Engines.

Some interesting developments are promised in connection with the Great Eastern Railway, which it will be well known has now an American general manager. Orders have recently been placed for two passenger tank engines of the 0-6-2 type. These are to have Belpaire boilers pressed to 180 pounds per square inch, two inside cylinders of 18 inches diameter by 24-inch stroke provided with 9-inch piston valves, coupled wheels of 4 feet 10 inches in diameter with ¾-inch side play for the leading pair and 3 feet 9 inches radial wheels at the bunker end. The weight, with about 1,500 gallons of water and three tons (6,720 pounds) of coal, is estimated at 134,400 pounds distributed over a 23-foot wheel base which is thus divided between centers: leading to driving 7 feet 6 inches, driving to rear-coupled 8 feet 9 inches, rear-coupled to trailing 6 feet 9 inches. The tractive power will be 19,788 pounds and the adhesive power 23,495 pounds. One of these engines will also afford the first example of a superheater tank locomotive on the Great Eastern Railway.

Although the 0-6-2 wheel arrangement is a novelty on the Great Eastern's system it is by no means so elsewhere, and there are at the present time some 1,400 such locomotives in the United Kingdom. The type is, indeed, well over thirty years old, for in 1882 Barton Wright was building his No. 150 class of 0-6-2 engines for the Lancashire and Yorkshire Railway and in all probability even then he was only following Continental practice. Most of our railways possess a goodly number of such tank engines, the London and North Western having 380, the Great Central 206 (representing nearly half its tank stock), the Taff Vale 151 (equal to 86 per cent), the London, Brighton and South Coast 134, the North Eastern 102, the Rhymney 79, the Barry 72. It is a type which is especially prominent on the mineral carrying lines of South Wales.

"Moguls."

The employment of the "Mogul" type for main line general utility work is increasing on the railways of this country and Mr. Gresley, on the Great Northern, has lately added a new class to his stock, with a larger boiler than the original series of two years ago and fitted with the Robinson superheater. The boiler provides 40 per cent increased heating surface and brings the weight of the engine up from 138,320 pounds to 142,800 pounds. With 14,560 pounds of coal and 3,500 gallons of water the tender weighs 96,320 pounds.

Interesting Irish Stock.

The Great Northern Railway of Ireland has recently placed in service a class of five 4-4-2 tank engines (built by Beyer, Peacock and Company), which possess some points of interest. The total weight is 145,600 pounds of which 76,160 pounds is carried on an 8-foot 3-inch driving wheel base; 36,400 pounds is sustained by the bogie and the burden of the radial wheels approximates to 33,600 pounds. The bogie wheels are fitted with brake mechanism worked from a separate cylinder carried on trunnions between the bogie frames. The trailing truck is of the Bissel type with radial horn guides. It should be borne in mind that the gauge is 5 feet 3 inches. The engines have not been fitted with superheaters owing, it is said, to the work for which they are designed involving much shunting and many short runs.

Value of the Superheater.

A number of the London and North-Western Railway's newest locomotives are equipped with superheaters. According to figures just made public by the company's engineering department there is an unusual reduction in water consumption to the extent of a million gallons for each engine so fitted. The superheater is one of the very few notable developments in locomotive practice during recent years, and the number of engines now equipped with the device, which is in use in every part of the world, is already very large, and is constantly increasing. When it was first introduced the superheater naturally had to prove whether the cost of adding it to a locomotive would be balanced by a corresponding increase in efficiency. That question has long been answered in the affirmative. This point is mentioned because the superheater has this in common with some other recent railway inventions that while it represents an added cost, the outlay is a good investment. Automatic signaling comes into the same category. We do not yet scrap our locomotives and other machinery so rapidly as in the United States, but we certainly have adopted the idea that the first cost of a new mechanical appliance is a factor of much smaller importance than the increased efficiency resulting from its use.

Changing Locomotive Types.

A few years ago the eight-wheeled locomotive with four coupled wheels, was the standard for express passenger work not only in England but also throughout the greater part of the continent of Europe. On most foreign railways the standard type is to-day a bigger machine with ten to twelve wheels, of which six are coupled, and a similar tendency has influenced British railway practice during the past decade. The majority of our express trains are nowadays hauled by ten-wheeled locomotives of which two types are used, having four and six coupled wheels respectively. The latter type is particularly at home on the Great Western where over a hundred are now running on the fastest express trains, while the latest London and North Western engines are of the same type. The London and South Western has about thirty of them, the Great Eastern will soon have the same number in service, and the North Eastern, the Lancashire and Yorkshire and the Great Central, as well as three of the Scottish railways, have also built engines of the 4-6-0 type as they are technically known. This designation, it may be explained, denotes that the locomotive, excluding the tender, is supported on ten wheels, of which the six in the rear are coupled together, while the four in front play no part in propulsion, but merely help to carry the weight and take some of it off the rear wheels. It is particularly interesting that this type should now have become the standard because a few years ago indications rather pointed to the general adoption of another type, the so-called "Atlantic." This is also a ten-wheeler, but only four of the wheels are coupled, the hindmost pair merely serving as carrying wheels. It is a type which has for years been very much in vogue in England for suburban traffic work, and it has been used on the Lancashire and Yorkshire and on the Great Northern and other railways for express traffic, while the Great Western had a few built for experimental purposes, including its imported French compound engines. But the type has not caught on to the extent that might have been anticipated. The reason is undoubtedly to be found in the explanation given to your correspondent by the locomotive engineer of one of the large lines on which both the "Atlantic" and the 4-6-0's had been tried, with the result that it was decided to adopt the latter type.

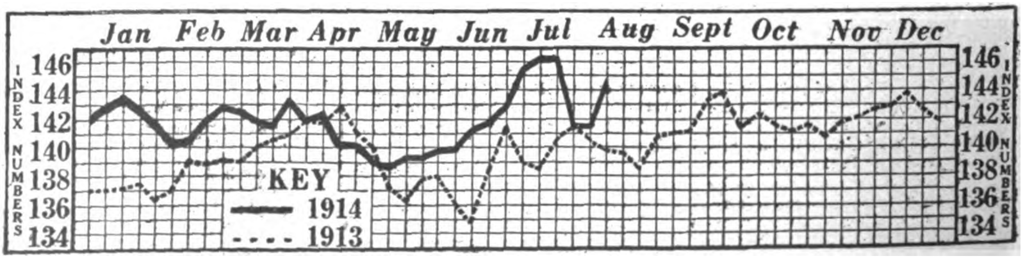
Financial

Recent Developments.

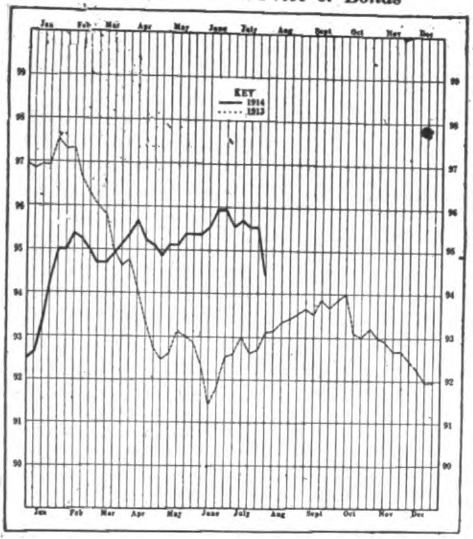
ALL ordinary signs fail in the face of such developments as have occurred during the past few weeks. The result of suddenly plunging Europe into an armed conflict such as the world has never witnessed, has been to throw out of gear the financial machinery of the world and to cause the collapse of the financial and security markets of this country as well as those of Europe. Ordinary calculations as to the effect of the war upon the markets are valueless, for the simple reason that past experience supplies no parallel for the situation which confronts the world today. Never has history recorded such an utter collapse of the credit machinery of Europe, or such a complete suspension of the international exchanges and a universal demoralization of the ordinary processes of trade and finances among the various countries of the world. The closing of the New York Exchange came only after the suspension of all European exchanges as well as those of Montreal, Can., and only after it had become apparent that this country would be made the dumping ground for the whole of Europe, if the Exchange continued open.

Under the circumstances, no other course was possible. It is a matter of congratulation, however, that during the earlier days of panic in Europe, our own market stood the strain with amazing stability and the record of Wall Street from the day on which the Austrian ultimatum was issued, until the closing of the Exchange several days later, is one which will stand, when the record is written, as an evidence of most remarkable resistance power. The closing of the Exchange was made necessary not only to protect American holders of our securities against the avalanche of sales which was crushing against our market, and under which prices were rapidly crumbling, but also because these foreign sales for cash furnished funds for gold exports, with reference to a continuation of which protective measures were imperatively necessary. The week ending August

The Cost of Living



Curve of The Basic Price of Bonds



first, saw exports of gold amounting to $48,000,000 and represented the third distinct gold movement to Europe this year; the first absorbed $16,000,000 and the second $63,000,000, or in all, a total thus far of $127,000,000. This movement fortunately occurred when our industry was slack and our bank reserves well protected, but it is manifest that it could not have continued much longer without causing the Nation serious embarrassment.

At no time in its history, has the United States more severely felt the necessity for a merchant marine. Great quantities of export products are now being held awaiting vessels in which to transport them to foreign countries. This situation is causing the gravest concern, and is one of the influences which is having an immediate effect upon our commercial activities. The grain crop is reported as unusually bountiful, the cotton crop has likewise shown great improvement within recent weeks, and other agricultural and meat products as well as manufactured goods are eagerly awaiting an opportunity to again enter international trade. No suitable methods have yet been found, however, by which this congestion can be relieved and unless one or the other of the warring combinations gets complete control of the ocean highways, there appears no satisfactory solution.

Of course railroad, as well as other, securities are at present a drug on the market; no efforts along the lines of new financing are being made, or may they be anticipated for some time to come.

The railroads are engaged in digesting the Commission's decision in the five per cent rate advance case, and to derive from it such comfort as it may contain. The decision, however, is held in the main to be extremely unsatisfactory, although it is hoped certain rate readjustments which the Commission has rather vaguely referred to, may be accomplished promptly enough to offer some measure of relief in the near future. Undoubtedly, should the international arteries of trade be again thrown open to our products, the railways would witness a decided improvement over their present condition, but any predictions, at the present time, are worse than useless.

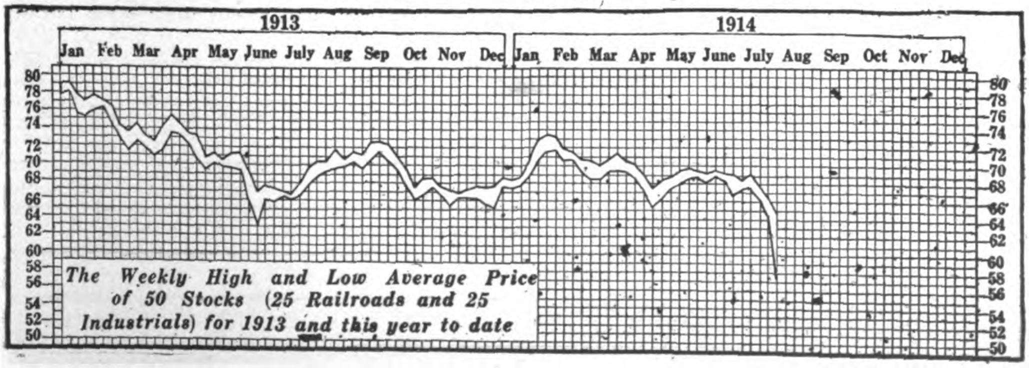
Railway Revenues and Expenses for May.

THE Bureau of Railway Economics has issued its monthly summary of revenues and expenses of steam roads in the United States for the month of May. This summary shows in brief, that returns for that month, reduced to a per mile line basis, and compared with the returns for May, 1913, show a decrease in total operating revenues per mile of 10.4 per cent, and a decrease in operating expenses per mile of 6.1 per cent. Net operating revenue per mile was less by $70, or 21.7 per cent, than for May, 1913, while that for May, 1913, was 9.8 per cent greater than for May, 1912.

Railways operating 225,858 miles of line are covered by this summary, or about ninety per cent of all steam railway mileage in the United States. Their operating revenues for the month of May, 1914, amounted to $232,567,938. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail operation. Compared with May, 1913, total operating revenues show a decrease of $25,038,021. Total operating revenues per mile averaged $1,030 in May, 1914, and $1,150 in May, 1913, a decrease of $120, or 10.4 per cent. There was a decrease of 13.4 per cent in freight revenue per mile, and a decrease of 2.8 per cent in passenger revenue per mile.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $176,029,940. This was $9,921,181 less than for May, 1913. These operating expenses per mile of line averaged $779 in May,

The Course of the Stock Market

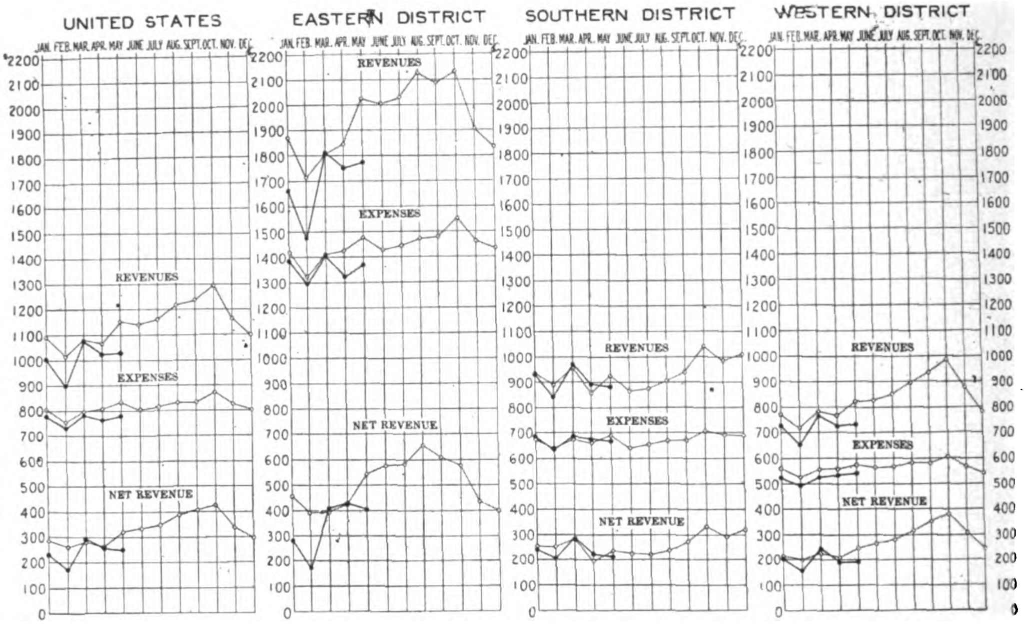


The Weekly High and Low Average Price of 50 Stocks (25 Railroads and 25 Industrials) for 1913 and this year to date

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1 000 000

CALENDAR YEAR:
1913 •
1914 •



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

1914, and $830 in May, 1913, a decrease of $51 per mile, or 6.1 per cent.

Net operating revenue, that is, total operating revenues less operating expenses, amounted to $56,537,998, which was $15,116,840 less than for May, 1913. Net operating revenue per mile of line averaged $250 in May, 1914, and $320 in May, 1913, a decrease of $70 per mile, or 21.7 per cent.

Taxes for the month of May amounted to $11,905,010, or $53 per mile, an increase of 11.2 per cent over May, 1913.

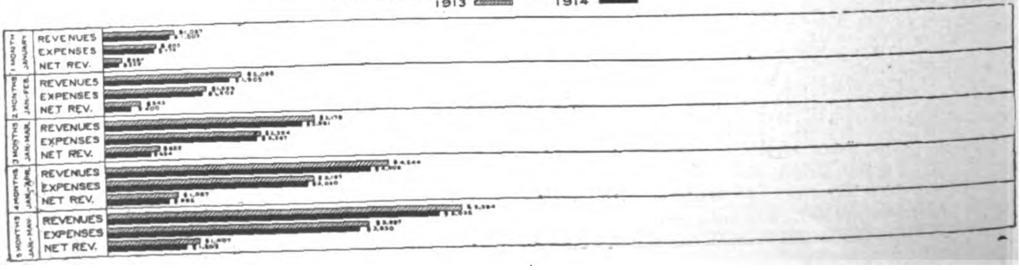
Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $197 per mile of line, and in May, 1913, $273, thus decreasing $76, or 27.9 per cent. Operating income for each mile of line for each day in May averaged $6.35 and for May, 1913, $8.81. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

The operating ratio for May, that is, the percentage of total operating revenues absorbed in operating expenses, was 75.7 per cent, which is comparable with 72.2 per cent in May, 1913, and 71.4 per cent in May, 1912.

Railroad Gross Earnings for June and the Half Year.

THE latest report of railway earnings by the *Commercial and Financial Chronicle* show a continuation of the unsatisfactory results of the past few months. Out of forty-five roads which have contributed advance figures of gross earnings for June, only ten show gains, while the losses in a number of instances, are of large amount. In the aggregate, for the whole forty-five roads reporting, there is a decrease of $4,739,136, or 7.15 per cent. Furthermore, the decrease would have been of yet larger proportions except for the circumstance that the present year had the advantage of an extra working day, June, 1914, having contained only four Sundays, whereas June, 1913, had five Sundays. Comparison is on the whole, with pretty good return of earnings in June of last year, as for that month the early

DIAGRAM COMPARING FOR THE INDICATED PERIODS OF THE CALENDAR YEARS 1913 AND 1914
CUMULATIVE REVENUES, EXPENSES AND NET REVENUE PER MILE OF LINE
ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1,000,000
1913 ▨ 1914 ■



statement registered a gain in the aggregate of over $5,000,000, or 7.44 per cent, while in June, 1912, there was also a fair amount of improvement. The following statement prepared by the *Chronicle* shows all changes as compared with June of last year for the separate roads for amounts exceeding $30,000, whether increases or decreases:

PRINCIPAL CHANGES IN GROSS EARNINGS IN JUNE.

	Increases.
Chesapeake and Ohio	$60,328
Cin New Orl and Tex Pac	39,001
Yazoo and Mississippi Valley	31,556
Representing 3 roads in our compilation	$130,885

	Decreases.
Canadian Pacific	$1,626,000
Canadian Northern	522,900
Grand Trunk	504,855
Wabash	317,089
Louisville and Nashville	256,698
Buffalo Roch and Pitts	219,228
Colorado and Southern	190,389
Chicago and Alton	180,139
Missouri Pacific	165,000
Minn St Paul and S S M	150,239
Illinois Central	116,872
St Louis Southwestern	109,000
Chicago Great Western	106,780
Missouri Kansas and Texas	79,058
Denver and Rio Grande	69,500
Grand Trunk Pacific	y58,923
International and Gt Nor	53,000
Duluth So Sh and Atlantic	50,308
Toledo Peoria and Western	30,426
Representing 19 roads in our compilation	$4,806,404

y These figures are for three weeks only.

The contraction in the grain movement during June has probably had considerable to do with the present year's unfavorable showing. In the South, however, the cotton movement ran somewhat heavier than last year and some of the Southern systems make really satisfactory comparisons of earnings with 1913, the losses on the Southern Railway and the Seaboard Air Line being relatively moderate in amount.

For the half year, according to the *Chronicle's* figures, railroad gross earnings show a heavy reduction as compared with similar results in 1913. In fact, this showing applies both to the gross and net returns but at the present time, only the gross figures are available for the entire period. In brief, railway gross earnings in the United States during the first six months of 1914 fell off no less than $84,500,000 as compared with the first six months of 1913. In other words, the railroads earned only $1,379,095,321 this year against $1,463,696,430 last year, a reduction close to 6 per cent. When it is considered that last year's figures were seriously influenced by the tremendous floods which occurred in the Middle West during the spring of 1913, and which cut down railroad traffic and railroad earnings heavily on certain roads, the unusually poor showing of the roads for the current year is more clearly apparent. Furthermore, it is noteworthy that there has been little permanent growth in railroad revenues in the first few months of the last six years with the exception of 1913, which recorded an increase of $136,000,000. 1912, on the other hand, showed an increase of only $51,000,000, while 1911, showed a decrease of $26,500,000. While there were increases in 1910 and 1909, of $173,000,000 and $122,000,000 respectively, in 1908 there was a decrease of $197,000,000 so that the past seven years show a rather spotted and far from satisfactory record where gross earnings are concerned. Prior to 1908, the country was in the full flush of prosperity and the trend was almost interruptedly upward for a full decade. The following summary shows the comparative results of gross earnings during the first six months of 1914 and 1913:

	1914.	1913.	---Inc or Dec---	
	$	$	$	%
Jan.	.233,073,834	249,958,641	—16,884,807	6.75
Feb.	209,233,005	233,056,143	—23,823,138	10.22
March	250,174,257	249,514,091	+660,166	0.27
April	236,531,600	245,048,870	—8,517,270	3.48
May	239,427,102	265,435,022	—26,007,920	9.73
June	197,231,111	207,139,547	—9,908,436	4.80

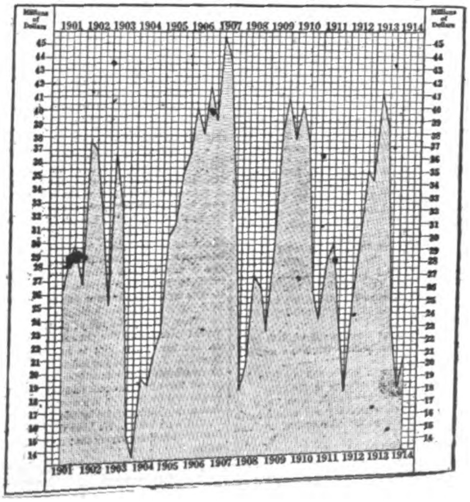
Quarterly Earnings of the United States Steel Corporation.

THE United States Steel Corporation has issued its statement for the quarter ending June 30th. Net earnings were $20,457,596, a substantial increase over the preceding quarter when they amounted to $17,994,381, but a very large decrease over the earnings of the second quarter of 1913, when they were the highest ever reported in that quarter, being $41,219,813. The accompanying chart which has been prepared by the New York *Analist* shows the net earnings for each quarter since the organization of the Corporation.

Following is the monthly record for net for the first half of the year, compared with the same period in each of the two immediately preceding years:

Month	1914	1913	1912
January	$4,941,337	$11,342,633	$5,243,306
February	5,655,611	10,830,051	5,427,320
March	7,397,433	12,254,217	7,156,247
April	6,920,879	13,072,710	7,509,207
May	6,845,823	14,554,566	8,846,821
June	6,690,894	13,592,537	8,746,237
Total	$38,451,977	$75,405,370	$42,929,238

Steel Trust's Quarterly Earnings



It will be observed that for the first six months of the current year there has been a decrease in net of $32,476,132, or almost exactly 40 per cent from those of the same period last year.

The directors declared the usual dividends of quarterly dividends of 1¾ per cent on the preferred and 1¼ per cent on the common stock, but earnings fell short of dividend requirements by $5,159,237, and it was necessary to draw on previously reported surplus to pay them. In the preceding quarter the Corporation failed to earn dividends by $6,289,644, so that the deficit for the first six months of the year amounted to $11,448,881.

In trade circles it is the consensus of opinion that the iron and steel business will not be injured by the European war except insofar as it affects general business, unless a great migration of labor (that employed in the iron and steel industries is for the most part foreign) should ensue as a result of the call to military duty.

British Investment in United States Railway Securities on the Decrease.

APPLICATIONS for new capital by United States railways in the London market during the first six months of 1914 were the smallest reported in any similar period over the past five years. Reflecting directly the general slowing up of railway activity the world over and more conspicuously the reluctant attitude of British capital toward investment in American railway securities under prevailing conditions, this unfavorable showing is based on a summary of railway borrowing in the London market received in Chicago by the Bureau of Railway News and Statistics.

Total borrowing on the part of United States railways for the six months amounted to $7,400,000. This compares with $9,800,000 in the first half of 1913, $30,115,000 in the corresponding period in 1912, $45,020,000 in 1911 and $76,060,000 in 1910. The last previous first half year with a lower aggregate was 1909, with only $1,000,000, preceded by 1908 when the first half year's borrowings were $40,000,000.

The following tabulation shows how borrowing on the part of our own railways during the past few years has slumped in contrast with other nations, until in the first six months of 1914 the greatest railway system of the world played the least conspicuous part in the bidding for new capital. The figures are in thousands:

First Half	1914	1913	1912	1911
U. S.	$ 7,400	$ 9,800	$ 30,115	$ 45,020
Gt. Britain ..	10,000	8,375	4,000	10,600
Canada	27,725	83,295	19,055	19,975
Colonies and India ..	30,500	17,500	19,000	14,000
Other foreign ..	79,555	116,610	68,525	117,125
	$155,180	$235,580	$140,695	$206,720

Though total capital applications were below 1913 they were above 1912 and but for the impossibility of inclusion of large Canadian loans they would have nearly if not quite equalled the totals for 1911 and 1910. Canada, which reached a record for railway borrowing in the London market in the first half of 1913 at over $83,000,000, fell to less than $28,000,000 in the first six months of this year. Yet this total is very incomplete, as large borrowing has been done by the Canadian Government direct, the greater part of which was for railroad purposes in guarantees to the Grand Trunk Pacific and the Canadian Northern. Two government issues in which railway financing was included amounted to $50,000,000 alone, which, if the railway portion could be determined, would go far to swell the Canadian figure and to bring the grand total nearer those of 1911 and 1910.

United States roads, on the other hand, from being the largest source of borrowing in 1910 have fallen to the lowest in 1914. What factors are working toward this condition are stated vividly in an English commentary to the poor showing made a year ago:

"It is satisfactory that under the circumstances British holding in American securities remains at a low ebb, and it may be hoped that re-investment on the other side of the Atlantic will not take place until the outlook is more assured. The American market has suffered from a continuance of the political disturbance in the country and of the legislative and judicial inquiries and attacks on railroads and other organizations.

"Railroad interests are confronted with increased expenditure in wages and materials and with growing hostility to a proposed corresponding increase in rates and charges. At the same time growing traffic requirements call for enormous capital outlay."

Operation

Freight Claim Prevention.

THE Frisco Lines have been experimenting with a division freight claim prevention committee and have so far obtained most satisfactory results. This committee which represents the Northern division of the road and was formed at Fort Scott on May 7th, has, since its inception, held the following meetings: At Fort Scott, June 9th; Kansas City, June 10th; Pittsburgh, June 11th, and Springfield, June 12th. About 300 employes attended each of these meetings, the purpose of which was to devise ways and means not only to prevent claims but to improve transportation. In order to reduce freight claim payments, it is essential that the close co-operation of employes who handle freight, be secured. There are about 15,000 such men on the Frisco and through their active efforts it is hoped to bring about $100,000 reduction in freight claim payments in the next fiscal year. So far the payments for this year have been reduced $42,000, as compared with last year, and it is expected that the year will close with a decrease of $50,000. It is the intention of the Frisco to form similar claim prevention committees at an early date at Kansas City, St. Louis, Memphis and on the Eastern and Ozark divisions and to gradually spread the work until all divisions are included. At the various meetings brief talks are given by freight claim officials in which claim statistics are cited and specific cases reviewed in order to indicate how the claims might be avoided. It is the hope of the committeemen that the innovation will spread like the "safety first" plan and will produce practical results.

Lackawanna Experiments With Loud Speaking Telephones.

A SHORT time ago, the RAILWAY WORLD contained a record of successful experiments with wireless telegraph for communicating with moving trains which have been carried on by the Delaware, Lackawanna and Western. Another innovation recently installed by this road and which has real practical value, has been a loud speaking device installed in connection with its telephone system and manufactured by the Stentor Manufacturing Company of New York City. These loud speaking instruments have now been installed on two train dispatchers' lines including all the Lackawanna lines in New Jersey. The transmitter, which is much like the ordinary instrument, is, however, much more efficient, while the receiver is in like manner supersensitive and is furnished in addition with a horn similar to that used on the phonograph, as shown in the accompanying illustration. The telephones are simply intended to reproduce at the receiving end, the normal conversational tone of the voice and with the new device referred to, are reported to be giving excellent service.

LOUD SPEAKING TELEPHONE DEVICE SUCCESSFULLY EMPLOYED BY THE LACKAWANNA RAILROAD.

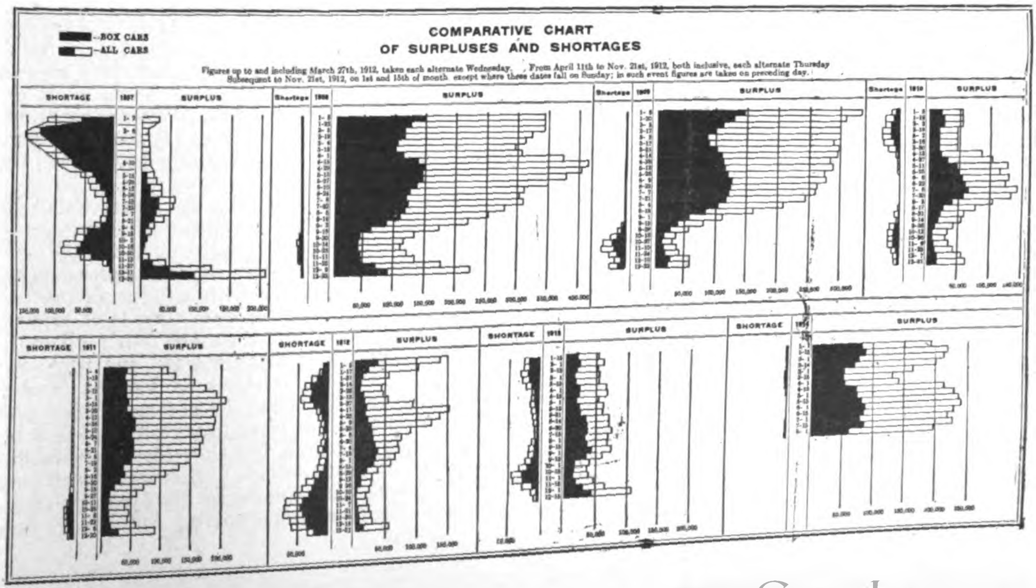
The cost of the instruments is small, there being no amplifying devices. A station, provided with both the loud speaking transmitter and the loud receiver, can be equipped at a cost of $50 exclusive of the batteries. In stations where the use of the loud speaking receiver is not necessary, the loud speaking transmitter alone can be put in for $25. The battery cost per station per year is about $1.80. The Lackawanna uses dry cells which have to be renewed twice a year. With complete installations at all stations a circuit can be worked without the use of selectors for calling. Without the calling bell the despatcher, to call a station, merely speaks the station's name into his transmitter in an ordinary tone of voice. The name is heard in all the loud speaking receivers on the line and for a distance of at least 15 feet from any one of them. The operator who is called can respond at once. An operator can call the despatcher in like manner.

The operator at a station equipped with the loud receiver can keep track of all that is going on, the same as with the Morse telegraph. As is well known, one of the chief objections to the use of telephones on the train wire has been the isolation of each office from all others except when the operator could take time to put the receiver to his ear. With the Stentor apparatus the operators have less occason to call on the despatcher for information as to the position of trains. The added opportunity for supervision on the part of the despatcher himself is also worth mentioning.

The Car Situation.

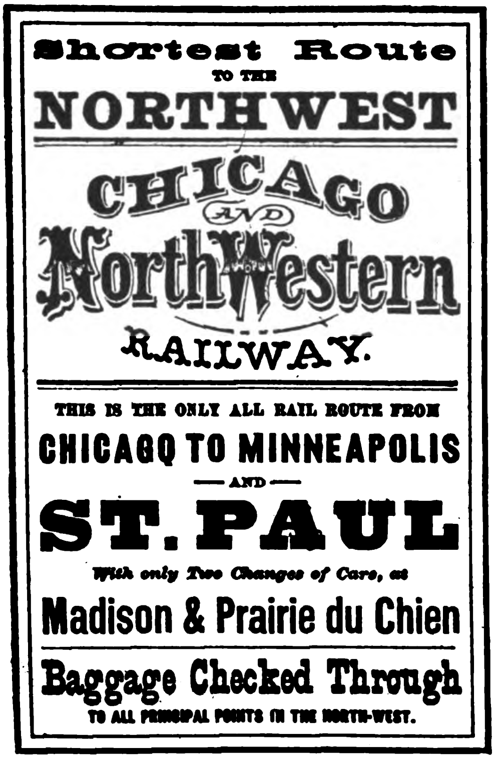
A REPORT of the American Railway Association issued on August 8th, shows that the total car surplus on August 1st. amounted to 198,998, as compared with 228,384 cars on August 15th, and 69,716 cars on August 1, 1913. The box car surplus decreased approximately 13,600 cars, the territory most heavily affected being the grain States and the Pacific Coast. There was a heavy increase in surplus box cars on the Canadian roads. The difficulty in securing vessels for export shipment has doubtless contributed in tying up a large number of cars at the various seaports.

The following diagram presents a record of car shortages and surpluses for a period of seven and one half years:

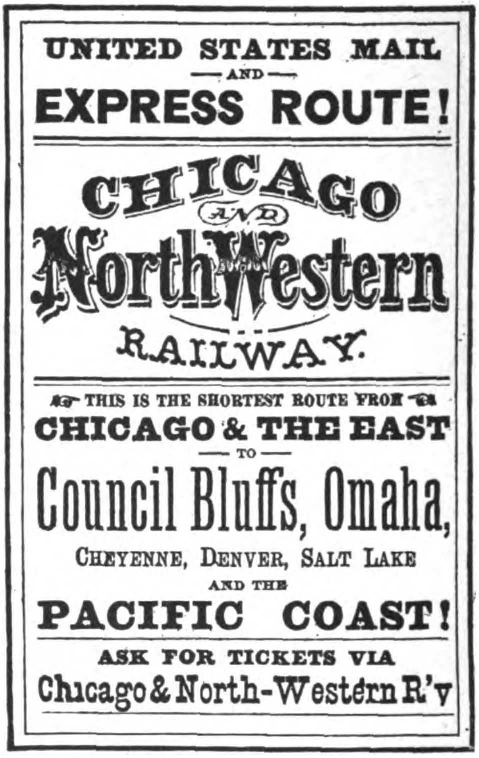


Time Tables of Fifty Years Ago.

IN these days of rapid progress and development, little time is permitted for even a casual study of the earlier efforts which marked our pioneer railway developments. Occasionally, however, an old document comes to light which illustrates in a forcible manner the wonderful progress which has been made during the past half century. The following reproductions of the title pages of a Chicago North Western Railway Company's time folder dated November 21, 1869, show how crude were the facilities of those days as compared with those of the present time. This is strikingly illustrated by the fact that the title page calls particular attention that the Chicago North Western in 1869 represented the only all-rail route from Chicago to Minneapolis and that in making this journey only two changes of cars were necessary. It is hardly necessary to state that a traveler of to-day would consider it an unusual hardship to have to make even one change in so comparatively short a journey, particularly in view of the fact that trips are now made from coast to coast, a distance of practically three thousand miles, without the necessity of a single change.



Shortest Route
TO THE
NORTHWEST
CHICAGO
AND
NorthWestern
RAILWAY.
THIS IS THE ONLY ALL RAIL ROUTE FROM
CHICAGO TO MINNEAPOLIS
—AND—
ST. PAUL
With only Two Changes of Cars, at
Madison & Prairie du Chien
Baggage Checked Through
TO ALL PRINCIPAL POINTS IN THE NORTH-WEST.



UNITED STATES MAIL
—AND—
EXPRESS ROUTE!
CHICAGO
AND
NorthWestern
RAILWAY.
THIS IS THE SHORTEST ROUTE FROM
CHICAGO & THE EAST
—TO—
Council Bluffs, Omaha,
CHEYENNE, DENVER, SALT LAKE
AND THE
PACIFIC COAST!
ASK FOR TICKETS VIA
Chicago & North-Western R'y

Reproduction of Title Pages of Chicago and North Western Ry Co.
Time Table Folder Dated November 21, 1869

The Importance of Accurate Time to Safety Work.

THE importance of the official time inspectors' organization in railroad service was pointed out by R. J. Clancy, assistant to the general manager of the Southern Pacific Company, at a "Safety First" meeting of the watch inspectors of the Pacific system at San Francisco, June 25th. Mr. Clancy, in his address to the inspectors, said in part:

"As official time inspectors you constitute a most important branch of the organization of a railroad. There are few, if any, things more important in relation to safe and expeditious train movement than accuracy of clocks and watches used in connection with train movement. Accurate time grows in importance in progressive ratio with train and traffic density and with accelerated train movement. Close clearances between trains of the same class, time orders affecting trains superior by class and direction, many trains operated which have no time-table identification—wholly regardless of restrictive rules, these are conditions admonishing and necessitating the use of accurate time recorders by those directly associated with the movement of trains.

"On a busy railroad like the Southern Pacific with a train mileage (on the Pacific system) of about 32,000,000 miles a year—approximately sixty-five per cent of which is fast passenger and manifest train mileage with a large extra train mileage—correct and accurate time is of primary importance. True, the lines are nearly all equipped with automatic block signals, and while this in a large degree forecloses on hazards incident to differentials in time, the automatic block system has its own functions to perform and it is not intended as a crutch for time inspectors to lean on. The time inspector's duties are separate and distinct, and they should be discharged with the single thought and purpose of full and faithful compliance with requirements of the service. Inspection should be thorough, uniform and in strict accordance with rules and instructions. The certificate of the inspector should mean just what it says. From this there should be no variation.

"In early days, with few trains on the road, accurate time was not so essential, but to-day, with train and traffic density one of the great problems on nearly all single track roads—with many trains moving under conditions where accurate time is the essence of safety—time-recorder variations have no place and should not be indulged. It is indeed complimentary to the system of inspection that for many years no accidents have been occasioned by time variations and none attributed to it.

"The company offers neither excuse nor apology in exacting efficiency both from you and from all other officials and employes. It has itself set the pace. It has expended $3,600,000 for automatic block signals, and a large amount for interlocking plants and elimination of grade crossings. It has expended in the last twelve years about $260,000,000 in the improvement of its properties. It is the pioneer in passenger steel car use and equipment. It built its first steel car eight years ago, since which time no wooden mail, baggage, coach or chair car has been ordered or built. Steel cars are used very extensively in its passenger service, and two thirds of its freight equipment is steel underframe. It stands one hundred per cent in compliance with all safety appliance laws and in the conservation of life and property, both of its own employes and of the traveling public. It has marched and is marching well in advance of crystallized public opinion.

"It does not rely on mechanical devices alone, however perfect they may be, but conjugates these with intelligent supervision. In the year 1913, 15,194 efficiency tests were made on train and enginemen and the percentage of efficiency was 99.56."

A Splendid Safety Record.

THE lines of the Pennsylvania Railroad system carried 87,000,000 passengers in the six months between January 1st and July 1, 1914, and not one of them was killed in a train accident. In the calendar year 1913, the Pennsylvania Railroad Lines West of Pittsburgh, carried 108,000,000 passengers and not one was killed in a train accident. The remarkable achievement indicated by these figures is more clearly understood by stating that there are 26,198 miles of track in this great system over which more than 113,000 passenger trains are operated monthly. In other words, the six months' record referred to means the safe operation by day and night, through all kinds of weather of 680,000 passenger trains, while at the same time approximately as many more freight trains were being cared for. On the Pennsylvania Lines East no passenger has been killed since 1912, and during this period these lines alone have carried more than 161,000,000 people.

Norfolk and Western's Safety Record.

THE Norfolk and Western has issued a statement showing that during April, 1914, 260 employes were either killed or injured, against 314 for April, 1913, showing a decrease in casualties of 54. This improvement was made in spite of the fact that April of the current year had 90,000 more engine miles than the same month of a year ago. This fine record shows the remarkable effect of the safety movement on the Norfolk and Western, and is one of which every employe of that road has reason to be proud.

Novel Plan for Safety Development on Grand Trunk.

THE Grand Trunk Railway, in the development of its Safety First Work, has also taken a novel means of impressing upon its army of workers the necessity of promoting safe conditions and practices. To engineers, firemen, and others in the motive power and operating departments a label has been issued with a request that it be attached to the inside of hats and caps.

This sticker says, "No Grand Trunk employe is expected to take unnecessary chances for the sake of saving time or for any other reason." It will serve as a reminder, easily carried, that "Safety First" methods of work are expected of all for the protection of the employe and passenger alike. Indeed every factor that tends towards safe operation is being insisted upon by the officers of the Grand Trunk system. In a bulletin just issued right methods of living are considered.

"In order to continue in promoting safety, it is every engineer's duty," this bulletin says, "to conserve the natural organs of the body. Normal mind is necessary to good service, and good health is necessary to the normal mind. Temperance in living, plenty of rest, plenty of sleep, and the required amount of exercise must be taken in order to be a continuing element of safety in the service. These laws of health being observed, the normal mind is retained and continued and the service benefited accordingly."

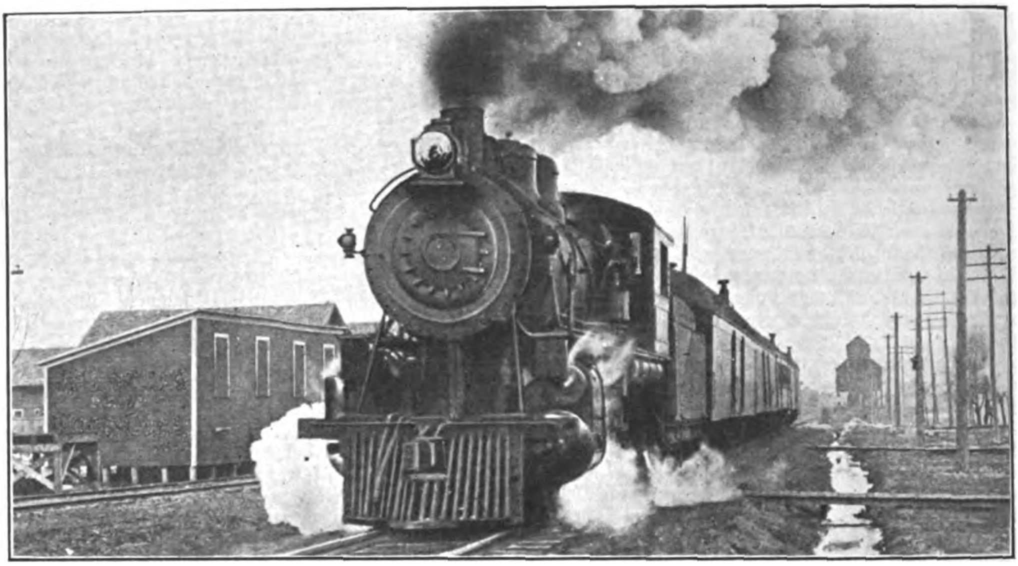
Recent Safety Results on the North-Western.

A REPORT just received from R. C. Richards, head of the Central Safety Committee of the North-Western road, stated that during the four years ending June 30, 1914, the North-Western has 10,516 fewer accidents than this road would have had on the basis of the number which occurred for the year ending June 30, 1910, which was the last year before the safety movement started.

During this four-year period, accidents on this road cost the company on an average per case of $136.04, so it can readily be seen that the actual cash savings effected since the installation of the safety movement have been very large, in fact, amounting to practically $1,000 a day for the entire period.

Safety Developments on the Boston and Maine.

A BULLETIN has recently been issued by the Boston and Maine Railroad showing that fatal accidents to employes during the first six months of the current calendar year totaled twenty, as compared with thirty-eight for a similar period in 1913 and thirty-three in 1912. A like comparison for serious accidents which involved the loss of an arm, leg or eye, show that for the first six months of 1914, only two occurred, while there were seven recorded for the first half of 1913 and nine in 1912. These figures show a decrease in fatal accidents as compared with the previous year of 46 per cent and in serious accidents of 71 per cent, clearly indicating the favorable influence of the safety movement.



The White Flyer of the Great Northern Railway Which Has Established a New Record for Carrying Mails.

A Remarkable Record.

THE accompanying illustration shows the White Flyer transcontinental mail train of the Great Northern Railway, which has recently established a record that is phenomenal in the annals of the United States Postal Service, in that it has made eighty-nine consecutive trips on time between St. Paul and Seattle.

This new mark in the carrying of Uncle Sam's mail was made from April 17 to July 15 and the record is all the more remarkable in view of the fact that during those eighty-nine days the White Flyer had to make up a total of seventeen hours and fifty-five minutes lost time, waiting for the Chicago connection which delivers the mail to it in St. Paul. On one occasion, for example, the White Flyer left St. Paul two hours and thirty-nine minutes late. Even that handicap did not mar its clean-score record, for the mail was delivered in Seattle on the dot.

Postal authorities in Washington, mail clerks and Government mail department superintendents all declare the record of this train is unprecerented in the history of the postal service.

The greatest single accomplishment of the Great Northern's White Flyer perhaps was the shortening of the time of mail delivery a whole business day between New York and Eastern points to Seattle, as well as between Chicago and Seattle and the Twin Cities and Seattle.

It is 1,814 miles from the Twin Cities to Seattle, and thirty minutes of each day there is only one of the White Flyer fast mail trains on the road. Monday's train arriving in Seattle thirty minutes before the departure of Wednesday's train from St. Paul. The scheduled time for the White Flyer from St. Paul to Seattle is forty-seven hours and thirty minutes, or an average of about forty miles an hour. This is the fastest long distance railroad operation in the world, notwithstanding that the Great Northern railroad's right of way extends over the two greatest mountain ranges of the continent—the Rockies and the Cascades.

Mechanical

New Electric Fan System for Passenger Coaches.

THE Safety Car Heating and Lighting Company in the July issue of the company's monthly, discusses at some length the installation of electric fans in passenger cars. Heretofore, the practice has been to locate such fans at either or both ends of the cars, but in this practice the area affected has been so small as to make the relief afforded of a negligible character. To quote from the article referred to:

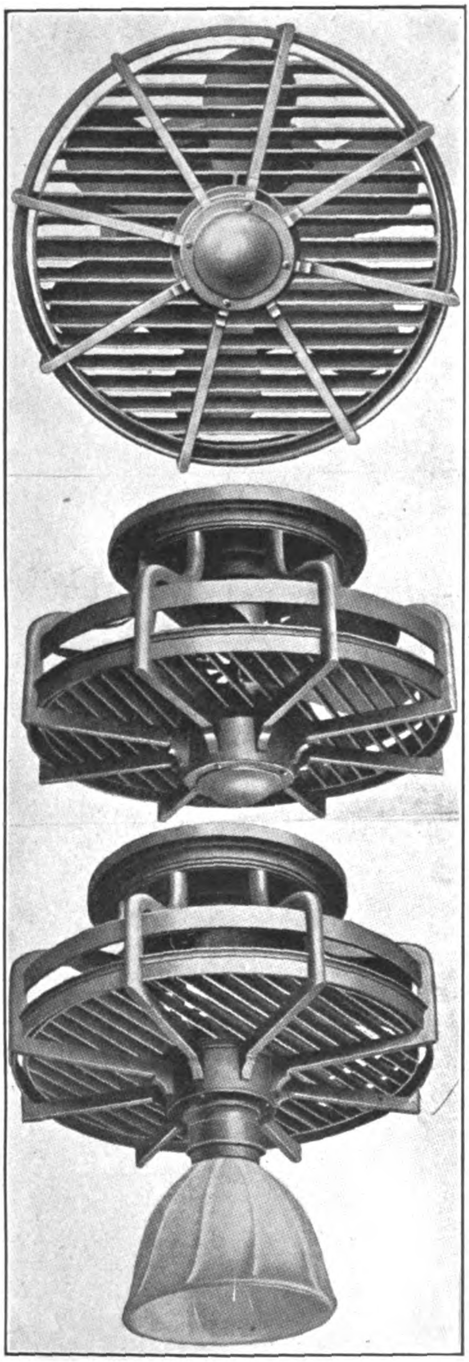
"The merit in design and location of electric fans is dependent on the area of the room or car affected by its operation and the amount of current required to cover the entire area. To place a fan at each end of a railway car and expect them to create sufficient movement of the air throughout the entire length of the car is impracticable. Even with a fan of large capacity with a consequent high current consumption, it is impossible to move the air in the center of the car and create an appreciable breeze when the fans are located only at the ends of the car. Such an air velocity would make it uncomfortable and dangerous for the passengers occupying seats at the ends of the car in close proximity to the fans. We, therefore, eliminated from consideration in our research work and development, any design of fan for use at the ends of the car.

"A fan hung from the ceiling on the longitudinal center of a car, if of the ordinary fixed type, would blow air with the maximum velocity in the aisle.

"This would be wasted energy, since it is the seated passenger who wants to receive the maximum benefit of the breeze from the fan.

"The next evolution in our study of fans was a consideration of the oscillating and gyrating types. Both of these types had an advantage over the fixed fan, and moved the air throughout a larger area of the car, but were deemed unsatisfactory on account of appearance, initial cost and high current consumption.

"About two years ago our developments reached the stage where we produced a fan which provided a wide range in the control of the direction of the air currents emitted by the fan. This control was effected by a combination of a sirocco fan and disc fan, with the sirocco fan starting the air current and the disc fan directing the breeze in a predetermined direction. This was probably the first successful attempt to absolutely control the range of air movement from an electric fan. The problem was near a solution, but the volume of air moved, in proportion to the current consumption, made this particular type of fan rather expensive to operate.



Three Views of New Electric Fan to be Employed in Passenger Coaches, Developed by Safety Car Heating and Lighting Company.

"The fan illustrated herewith is the final solution to a problem which has consumed exhaustive study; but the final result, as embodied in this fan, has well repaid the long, earnest efforts of our engineering department.

"In demonstrating this fan to a railway official, one of our engineers said: 'It consumes seventy-five watts, operates under three different speeds, directs the air where you want it, and can be used as a combination fan and lighting unit.' 'Well,' said the railway man, 'you are not overargumentative about its merits, but I suppose when you have said that the ordinary safety pin "holds and doesn't stick," you have covered its purposes, and the simple way it does what it was intended to do, leaves nothing to be said against it.' This fan so simply and successfully performs its functions, that a lengthy description of its features is superfluous.

"This fan moves the maximum volume of air at the greatest velocity over the largest area with a minimum expenditure of electric energy. Its current consumption is about 75 watts.

"It directs the breeze where it is most needed to cool and comfort the traveling passenger. Directly underneath the fan there is no appreciable movement of the air, so that energy is conserved. The greatest velocity of air is within a zone of between 30 and 45 degrees to the nadir or perpendicular, and tapers to zero at the perpendicular and at about 60 degrees to the perpendicular, thus insuring the maximum air movement at the car seats or dining car tables.

"The air deflecting planes rotate at a speed of about ten revolutions a minute and deflect the air in the proper direction. This rotating plane causes the cooling breeze to blow on the passenger twenty times a minute, eliminating the objectionable steady drafts of air.

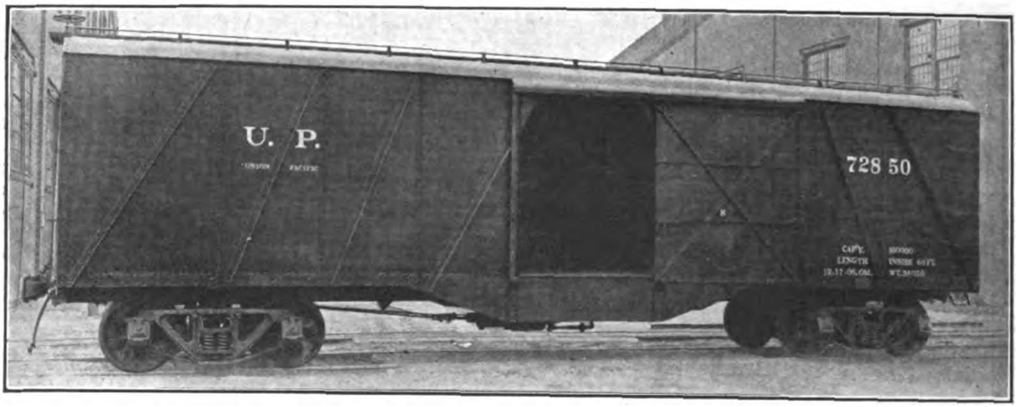
"The velocity of the air blowing on the passenger is always ample for comfort and cooling effect, but it is not so strong as to be annoying—a soft, cooling zephyr every three seconds.

"The velocity of the air is under control of the porter or trainman with minimum attention. The motor operates under three speeds, controlled by a small switch located at some convenient point in the car."

Important Patent Granted on Steel Car Construction.

On June 19, 1914, the United States Patent Office issued to William R. McKeen, of Omaha, Neb., a patent on new and novel features involved in the construction of all-steel box cars, which is of unusual importance to steel box car manufacturers. This patent has been in litigation since 1906 and has been argued before the highest of patent experts, including the examiners in chief, commissioner of patents and the Court of Appeals or the District of Columbia. Practically every claim made by Mr. McKeen has been awarded to him.

The accompanying photograph shows a Union

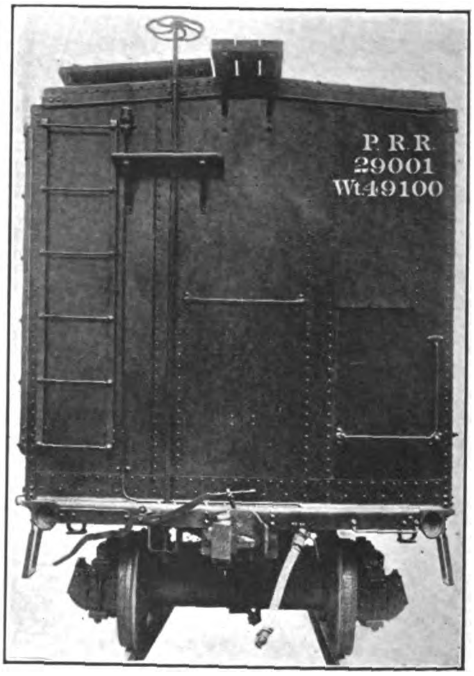


McKeen All-Steel Box Car on Which Important Patents Have Recently Been Granted.

Pacific car built under this patent in 1906. This car, together with one other, were the first two all-steel box cars built, and it is reported that they have made a remarkable record for efficiency and freedom from accident, as well as for carrying successfully all kinds of materials in all kinds of climates.

One of the particular features of the car, as constructed under the McKeen patent, is the diagonal braces, shown in the photograph, that start near and adjacent to the center door and extend up to the plate of the car, cutting off thereby a little triangle of the door aperture. This is considered an extremely advantageous feature in retaining the strength of the steel used in the car construction without sacrificing loading and unloading capacity.

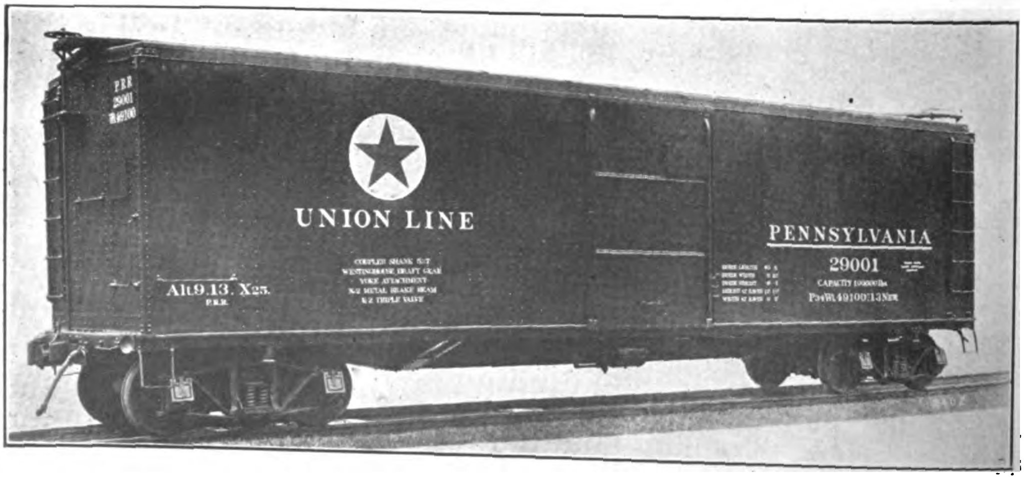
This car which is of remarkably light weight (38,050 pounds) has now been in active service for eight years without developing any structural weakness, and it is claimed that the saving in the cost of the car itself, in combination with the low cost of maintenance, is an important item in dollars and cents for a single car each year. When these figures are applied to the equipment of an entire road, striking economies are shown to be possible.



End View of Pennsylvania Railroad's New All-Steel Box Car.

All Steel Box Cars for the Pennsylvania Railroad.

THE Pennsylvania Railroad is adding a new feature to its equipment. It is an all-steel box car. The company now is well supplied with all-steel passenger cars and with a

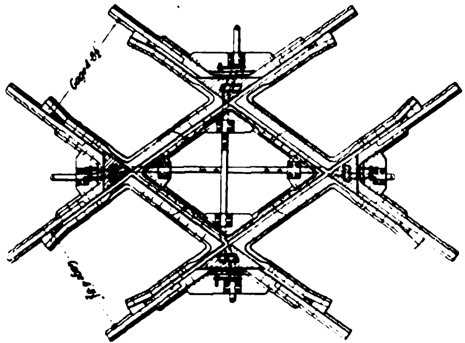


Example of a Number of All-Steel Box Cars Recently Installed on Pennsylvania Railroad.

number of all-steel milk cars, and in pursuance of its general policy to gradually change its rolling stock to cars of steel construction, it has now begun the installation of steel box cars. While the departure is experimental at the present time, it is believed that from an economic point of view it will prove successful for while a wooden box car only costs about $1,050 as against a cost of $1,500 for a steel car, the life of the latter is so much longer than that of the former that the change is expected to produce added ceonomies. Another feature of no inconsiderable importance is that the steel car affords a much greater protection against damage for freight than does its wooden competitor.

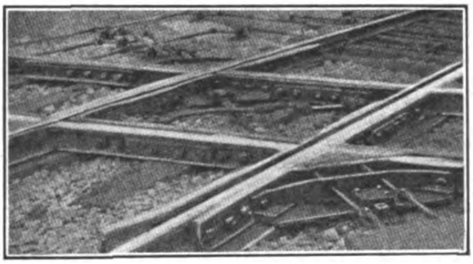
A Continuous Crossing of Simple Design.

THE Eymon Continuous Crossing Company, of Marion, Ohio, has recently developed a continuous crossing of extremely simple design. It consists of four triangular movable frog points at the intersections of the gage lines whose movements are controlled by rods passing under the base, with horizontal castings. These bars are directly connected with an interlocking tower, and move the points from one position to the other by the direct forward or backward movement of the bar without any intermediate points. To prevent the points from moving under a train, each corner is bolt-locked in its proper position by two bolt lugs, also operated from the tower independently of the movement controlling the point.



Plan of Eymon Continuous Crossing

One of these crossings was installed in the main track intersection of the Pittsburgh-Toledo and the Columbus-Sandusky branches of the Pennsylvania lines at Carrothers, Ohio, on May 25, 1914, and have been in continuous service since that date. Both lines at this point are single track, and carry a relatively heavy traffic. Twelve passenger trains, and over 1,500 freight cars, many of which are heavily loaded with coal, pass over this crossing daily. While it is too early to secure any definite or conclusive data regarding the cost of maintenance, it is reported that no expense has been required to date.



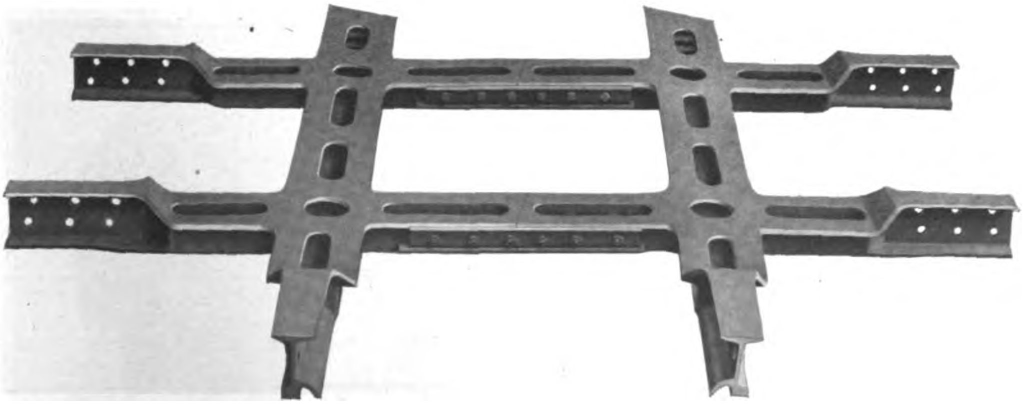
THE EYMON CONTINUOUS CROSSING.

This crossing is at an angle of about 70 degrees, and is built of 85-pound rail. It is of manganese construction and weighs 6,900 pounds. Before installation it was connected up at one side, and was then slid into place. A gang of sixteen men removed the old crossing, placed the new one, and connected it to the interlocking plant, with the exception of the bolt locking, ready for a train to pass in thirty-two minutes.

A New Steam Electric Crossing.

THE accompanying illustration shows the latest type of steam electric crossing, as now made by the St. Louis Steel Foundry Company, to whom patents have recently been granted.

In the past there have been many failures of solid manganese steel crossing, failures being caused by cracks in the bottom of the flangeways at the intersection. While some of these cracks were due to poor foundry practice, many of them were due to the fact that the crossing was not designed with proper beam strength across the intersection, many manufacturers leaving out all the lower cross members in the crossing.. These lower cross members are alternately subjected to tension and compression, due to the movement of the train over the crossing. Without the addition of these bottom members, as here shown, the metal under the flangeway had to carry all this strain, and as this metal was only about one inch in thickness



THE LATEST TYPE OF STEAM-ELECTRIC CROSSING.

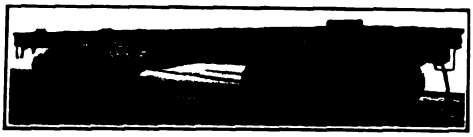
and was practically lacking in the neutral motion of the beam, early rupture was sure to occur.

With the addition, however, of these proper lower beam members, tying the crossing together, the entire crossing is made just as strong at the intersection as it is on the other parts of the running surface. This device has been in service for about a year, and has proven itself very satisfactory.

A New Pit Car for the Canadian Pacific.

THE Canadian Pacific Railway has recently had constructed a 75-ton pit car to be employed in handling heavy structural and machinery parts. We are indebted to the *Canadian Railway and Marine World* for the accompanying illustrations. The car has been designed so as to meet the requirements of the Canadian General Electric Company in transporting electrical machinery such as transformers, etc., and also to handle the heavy steel members being manufactured by the St. Lawrence Bridge Company and to be employed in the construction of the Quebec bridge. Six of these cars have been completed.

The bridge requirements called for a car that would carry members weighing 130,000 pounds, and 16 feet high. The clearance limit made necessary the pit construction. Following are the principal dimensions:



General View of Canadian Pacific's New Pit Car.

Length, 36¾ feet; width, 10 feet; top of rail to top of deck, 4 feet 2¼ inches; truck centres, 26½ feet; truck wheel base, 5½ feet; length of pit, 18 feet 1 inch; width of pit, 6 feet; wheels, 33-inch rolled steel; journals, 6 by 11 inches; draft gear, twin M. C. B. class G springs; load limit, 150,000 pounds; average tare weight, 48,000 pounds.

The pit cover is made in two pieces, and when the open pit is required, the two parts of the cover are carried on the ends of the car, where they are held in place by stakes and large steel angles rivted to the deck. The covers are composed of heavy wooden decking attached to steel I beams, the ends of which are equipped with cast steel lugs, resting on the top of longitudinal sills. The entire top of the car is covered with heavy wooden decking, and is provided with holes for bolting down blocking for the loads. When the pit covers are in place, the car presents the appearance on top of the ordinary flat car.

Each car has two complete sets of brakes, one for each truck. They are of the Canadian Westinghouse Company's schedule K. D. 812. The cars were designed in the office of R. W. Burnett, general master car builder, to whom we are indebted for the data on which the foregoing information was compiled, and they were built by the Canadian Car and Foundry Company.

We are officially advised that the four 75-ton pit cars, which the Intercolonial Railway has ordered from the Eastern Car Company, Ltd., will be exactly the same as the Canadian Pacific Railway cars above described.

Experimenting with Steel Rails.

TO ascertain whether added safety and more satisfactory results can be had from the use of heavier steel rails than those now in service, the Pennsylvania Railroad will experiment with rails weighing 125 pounds to the yard. The rails now used by the railroad weigh 100 pounds to the yard. Fifteen thousand tons of 125-pound rails have been authorized and 2,500 tons of this lot have been ordered.

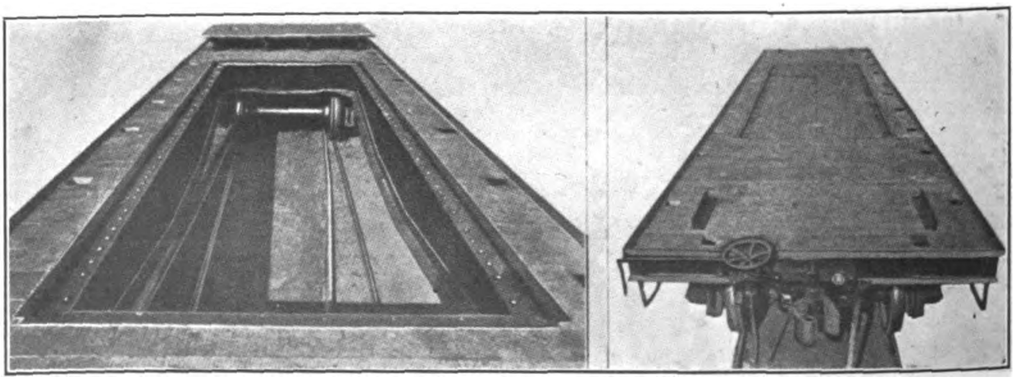
With the constantly increasing weights of locomotives and cars, it will be necessary gradually to improve the roadbed so that when it shall have been found that the 100-pound rail is unable safely to support the increased weight of equipment the new and heavier rail standards will have been so generally introduced that a full margin of safety will have been provided against in ample time.

A committee of experts has been at work for more than a year past, carefully reviewing the whole rail situation for the purpose of devising specifications to produce for the company a rail insuring the greatest factor of safety and promising most substantial qualities of endurance.

The first 100-pound rail was laid on the Pennsylvania Railroad in 1892. Sixty-pound rail had been introduced in 1881; 70-pound rail in 1884; 75-pound rail in 1886; and 85-pound rail in 1887. The 125-pound rails will be laid in the tracks of the Main Line on heavy grades and curves.

Rail Investigation by the Bureau of Standards.

THE main objects of the investigation recently completed by the Bureau of Standards, Department of Commerce, into the finishing temperatures and properties of rails were to determine, from measurements taken in representative rail mills, the present American practice regarding the temperatures at which rails are rolled;



Two Views of Canadian Pacific's New Pit Car, Showing Cover Removed and in Place.

to demonstrate the ease and accuracy with which such temperatures may be measured; to find out what the "shrinkage clause" in rail specifications really means; and finally to determine for rail steels some of the physical properties, particularly those of interest in manufacture.

Observations were taken with an optical pyrometer of ingot and finishing temperatures of rails in four representative mills. There is practical uniformity among the several mills for the rolling temperatures of ingots for steel rails, the range being from 1080 degrees C. (1975 degrees F.) to 1140 degrees C. (2085 degrees F.). There is no very considerable difference among the finishing temperatures of the rails as observed at the hot saws for the several mills, the range being about 880 degrees C. (1615 degrees F.) to 990 degrees C. (1815 degrees F.). Or, in other words, the four mills all finished their rails to within 50 degrees C. of 935 degrees C. (1715 degrees F.) on the average. This temperature of 935 degrees C. is 270 degrees C. (520 degrees F.) above the mean value, 665 degrees C. (1230 degrees F.) of the critical ranges of these rail steels. Concerning the distribution of temperatures within the head of a cooling rail, it is shown that the center of the head is some 50 degrees C. (120 degrees F.) to 60 degrees C. hotter than the optical pyrometer reading at 935 degrees C., therefore the center of the head is finished, on the average, at about 325 degrees C. (615 degrees F.) above the critical range for 100-pound sections.

Chemical analyses and microphotographic examinations were also made and the mechanical properties determined for a number of samples of rail, the rolling of which had been observed. From a comparison of these few observations, there appears to be not a sufficient degree of correlation to warrant associating very specifically any of the characteristics defined by these three methods of examination, either with the temperatures of rolling here observed, or with each other.

The following thermal properties of these rail steels were determined in the laboratory:

The critical range on heating is located (maximum) to within 7 degrees C. of 732 degrees C. (1350 degrees F.) for the ten samples of O. H. and Bessemer steels examined. On cooling the critical range lies between the limits 680 degrees C. (1256 degrees F.) and 650 degrees C. (1202 degrees F.).

The melting or freezing range for rail steel extends from about 1470 degrees C. (2680 degrees F.) to nearly the melting point of iron, located at 1530 degrees C. (2786 degrees F.).

The expansion for O. H. and Bessemer steels is not the same. Above 800 degrees C. (1470 degrees F.) the expansion for both increases linearly with temperature and the linear coefficient per degree centigrade has the following mean values between 0 degree and 1000 degrees C.:

(1) For Bessemer steel (carbon .40 to .50 per cent): alpha equals 0.0000146.

(2) For open-hearth steel (carbon .65 to .70 per cent): alpha equals 0.0000156 to 0.0000161.

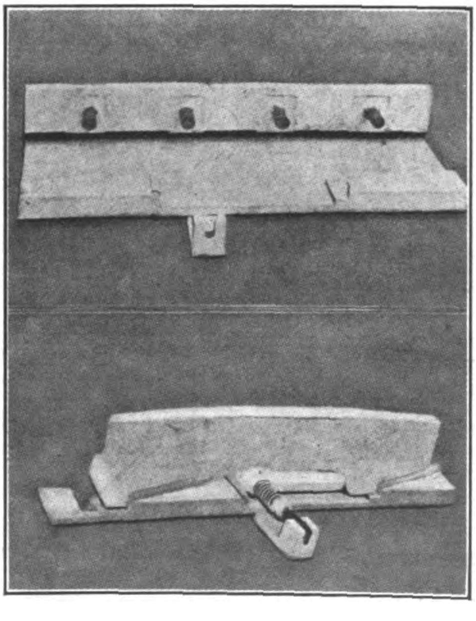
The average composition of the Bessemers was carbon equals 0.40 to 0.50 and manganese equals 0.76 to 0.93; of the open-hearths, carbon equals 0.66 to 0.70 and manganese equals 0.66 to 0.72.

The American Society for Testing Materials in 1909 limited the shrinkage allowance on 100-pound sections to 6¾ inches in 33 feet, or to an equivalent of 1947 degrees F. (1064 degrees C.) for O. H. and 2055 degrees F. (1134 degrees C.) for Bessemer rails. This specification is still in force. Such a shrinkage clause therefore does not serve the avowed purpose of limiting the finishing temperatures to a value slightly above the critical range.

In conclusion, it should be emphasized that the various series of observations recorded in this investigation are of but a preliminary nature and do not pretend to solve the question of the relations between temperature of rolling and the properties of rails. It would seem desirable to make a much more complete and comprehensive study of the various matters mentioned and of related questions than has hitherto been attempted, and on a scale commensurate with the importance to the community of the problem of sound rails.

Successful Experiments with Automatic Continuous Rail Joint.

FOR several months the automatic continuous rail joint has been under test by the Chicago and Eastern Illinois Railroad at Coler, Ill. These tests have proven so satisfactory that the company is now making preparations to place others in its No. 4 freight track in the near future. The joint as shown in the accompanying illustrations consists essentially of a base plate with an inside angle bar and lugs to engage the bolt holes in the rail, an outside angle bar and riser, and a pawl and spring to hold the joint in place. In applying the joint the combined base plate and angle bar is inserted under the rail. The other angle bar is then placed in position and driven endwise until the wedging action brings it in contact with the rail. The pawl and the spring hold the joint in place, as shown in the photograph. It is claimed that in this manner the joint is always tight, eliminating the expense and attention required to keep the bolts tight, that the riser prevents the battering of the rail, and that the joint is prevented from opening by the lugs on the inner angle bar. As installed in the Chicago and Eastern Illinois tracks, the joint is 26 inches long and weighs 100 pounds. While in the side track these

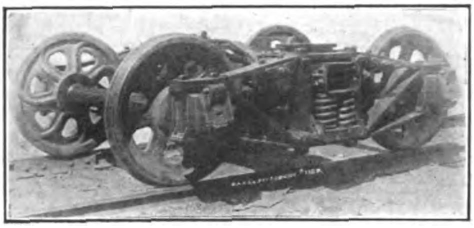


Two Views of Automatic Continuous Rail Joint, the First Showing Base Plate and Inside Angle Bar Section and the Second Showing Complete Joint in Place.

joints have been carrying the heavy Mikado engines of the Chicago and Eastern Illinois and the Elgin, Joliet and Eastern, drawing tonnage coal trains at speeds up to ten to fifteen miles per hour, and are reported to have required no maintenance in this interval. This joint has been patented and is made by Charles Troup, Watseka, Ill.

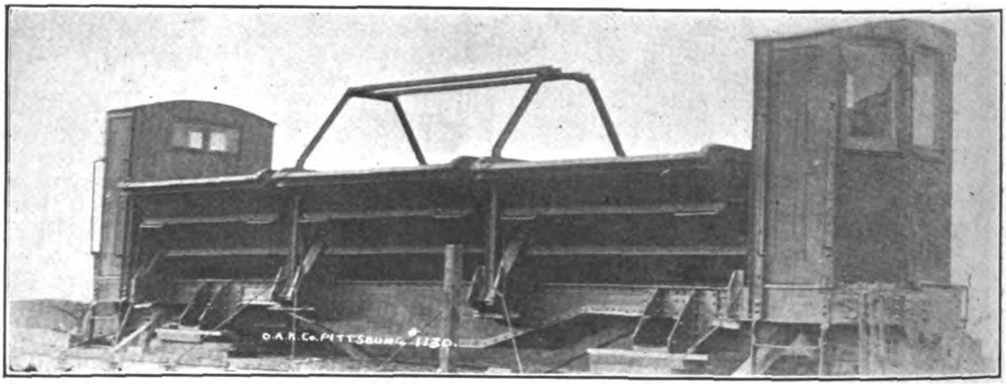
A New Car for Street Railway Construction Work.

IN the construction work of street railways there has long been a need for a steel car, which could be used without spilling any of the material along the street and in which several different materials could be handled at the same time.



Truck of Car Employed in Street Railway Construction.

Realizing this demand the Orenstein Arthur Koppel Co., of Koppel, Pa., have reecntly designed and constructed several cars for taking care of this work, a number of which have been shipped to the Dominion Power and Transmission Company of Toronto, Canada. Their general appearance is indicated by the accompanying illustrations.



Steel Car Specially Constructed to Facilitate Street Railway Construction Work.

The cars were each of a 15 cubic yard capacity loaded level and from 18 to 20 yards when heaped and not only can different kinds of material be transported, but part of the load can be dumped on one side and part on the other side.

The body is of the V shape and the entire construction covered by United States and foreign patents.

Locomotive Superheaters and Their Performance.

THE *Journal* of the Franklin Institute for August prints an interesting discussion by C. D. Young, engineer of tests of the Pennsylvania Railroad Company at Altoona, Pa., regarding the relative value of high superheat and low superheat in connection with locomotive superheaters and their performance. Mr. Young believes it has been definitely proven that for the high steam pressures now commonly employed, high superheat is much more advantageous for locomotives than low superheat. While he admits that the same difficulties in the way of deterioration of the metals employed in the superheater structure are not encountered with low superheat, he nevertheless, finds the net advantages of the high superheat to be much greater than its less intensive competitor.

He calls attention to the fact that on the Continent almost all locomotives of importance are now fitted with the Schmidt type of superheater which is a fire-tube superheater. More than one form of fire-tube superheater is, of course, used abroad but in the main, they are either a Schmidt superheater or one constructed practically upon the same principles. To quote from the article:

"In this country many fire-tube superheaters have been devised, but they have all grown out of the idea advanced by Mr. Schmidt. In regard to the fire-tube superheaters, it is very pleasing to me to know that an inventor, even though he may be a foreigner, has been able to preserve and establish in general use an invention of so much values as we can attribute to the Schmidt superheater. I have, of course, opposed the Schmidt superheater at times in very many places—sometimes successfully and sometimes not successfully—but for commercial reasons only; and when those commercial reasons were removed I was very glad of the opportunity to admit that, for general use in locomotives, I considered the Schmidt superheater superior to our own type of low-pressure superheater or any other type of high superheater which we may have employed. Simplicity of construction and the general accessibility of the device also commend it, and in this particular device and in similar devices I feel that nothing has been left undone to make it not only accessible at all times, but easy of maintenance, and as a general thing it is never found fault with by the locomotive engineer who must use the locomotive, but is always spoken of very highly by him.

"Now the advantage of using a superheater on a locomotive is, as Mr. Young states, to get more power out of the particular locomotive. That which gives a locomotive its power is its boiler, and any device which can be added to a locomotive to increase the effectiveness of its boiler increases beyond question the effectiveness of the locomotive.

The original hauling power or starting power of a locomotive it is impossible to increase because that depends entirely upon the weight on drivers, but it is possible to increase the hauling power of the locomotive in tons and in speed of miles per hour—or, in other words, in horsepower. If you are developing your tractive power at forty miles, you can still increase the horsepower, for the horsepower depends upon the number of pounds of water you are able to evaporate in the boiler. If by a device such as the steam suprheater you can get a certain horsepower with 20 per cent less water or 30 per cent less water, it is perfectly natural to suppose you can evaporate the same amount of water in this boiler and by the use of a superheater you can develop a speed of, say, 40 miles per hour and haul 30 per cent additional tons, and it is for this reason Mr. Young, I believe, makes the statement that the lighter-powered locomotives can have their hauling power increased by the addition of superheaters. But do not allow yourselves to be led astray by the fact that these locomotives can haul more tonnage because they can steam any more effectively, but they can haul more tonnage at the speed in miles per hour, and thus increase the earnings of the railroad company owning them accordingly and add to their own intrinsic value to that company. As locomotives have been increasing in size in the last few years, all of us have been struggling with the question of getting the greatest number of tons of freight over the road in a single unit, or at one train movement, and a train movement costs just the same whether it is large or small. The laws of the various States now prescribe the number of men that the railroad must carry to a train, and the principal number of these men are hauled in the caboose. The locomotive engineer really does the bulk of the work—when we dispose of the fireman—the conductor keeps tabs on his car numbers, and the remainder of the crew have a pleasant journey.

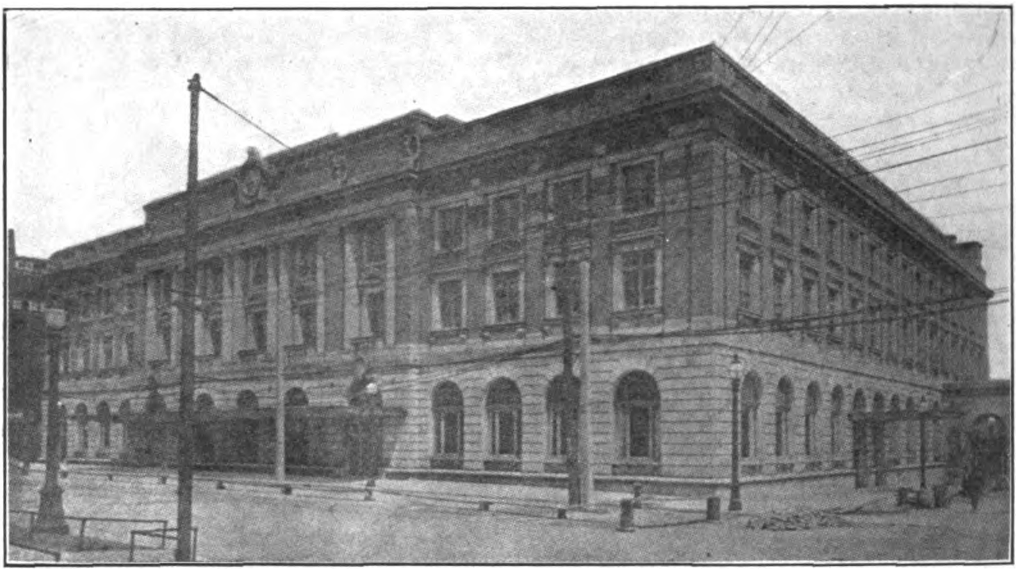
"The advance in the weight of locomotives in this period has been phenomenal, and even though we thought that we had reached a fair size of locomotive—or a really large size—these locomotives do not prove quite so effective as their size should have made them. It was apparent to us that the reason for this is that we are not able to work the boilers at what they should do on account of the human equation—the human equation being the fireman. Therefore, the superheater man comes along, and applies superheaters to these particular locomotives, and we find we have a very much greater result in hauling trains at different speeds and in their general efficiency, although the demands of railroads for heavy cars and moving heavy tonnage have led us to go back and modify our compound system to include the superheater system, for the purpose of still further reducing the water rate per horsepower and adding to the hauling power of such a unit as can be conveniently employed. Such locomotives are constructed up to a tractive power capacity of about 100,000 pounds, and the limit is supposed to be reached, because even with automatic power we could not get the full capacity of a boiler; and, although it may not have been apparent to any of you here present that a Mallet locomotive, for size, is a very much smaller type than any other locomotive in service, at the same speed at which these engines were operated and with the use of superheaters they seem to be a very desirable engine. Take the case of the automatic stoker; general opposition was made to the introduction of an automatic stoker, because it was said if a fireman was able to shovel the coal there was no necessity for applying automatic devices for this purpose. The result, however, of the experience with various automatic stokers has boiled the art down to probably one or two devices; one device especially is most effective, and, in my judgment, has solved the question of the compounding of locomotives. We have been able lately to construct, for one of the most progressive railroad presidents in the United States to-day, a locomotive of 160,000 pounds tractive force, and which, in our judgment, and from its ease of movement and its apparent life before any trial in service, is going to be a very successful unit of power. Now, such a locomotive has been arrived at by the careful and intelligent employment of the first principles of locomotive economy, the uniformity, similarity, and the continuity between the different sections. This locomotive is in three sections, with three pairs of cylinders, three sets of driving wheels, one tubular boiler, and an ordinary locomotive engineer and fireman. The compounding of the steam is in the ratio of two to one, which ratio is suitable for superheated steam. The superheater used is a Schmidt superheater similar to the one shown to you to-night by Mr. Young, and is capable of reducing the water rate from 24 pounds to 16 pounds under proper conditions. And, in addition to that, this locomotive has been equipped with a mechanical stoker for supplying coal to the fire and properly distributing it over the surface of the fire; it works admirably, and is successful in every way for firing this locomotive, which will require about 11,000 pounds of coal per hour. No effort whatever on the part of the fireman, with the exception of properly attending to the valves running the engine which drives the firing mechanism, is necessary.

"Therefore, you see that, at the present time enjoying the advantages of these economical mechanical inventions of the past one hundred years, the future geenration, commencing now in the year 1914, is going to really build large units of power for railroad transportation, and in a few years from now we will look back upon these insignificant pigmies with which we have been transportating trains throughout this country and smile that we did not tumble to these various inventions many years ago."

Terminal Improvements

New Passenger Station at Utica, New York.

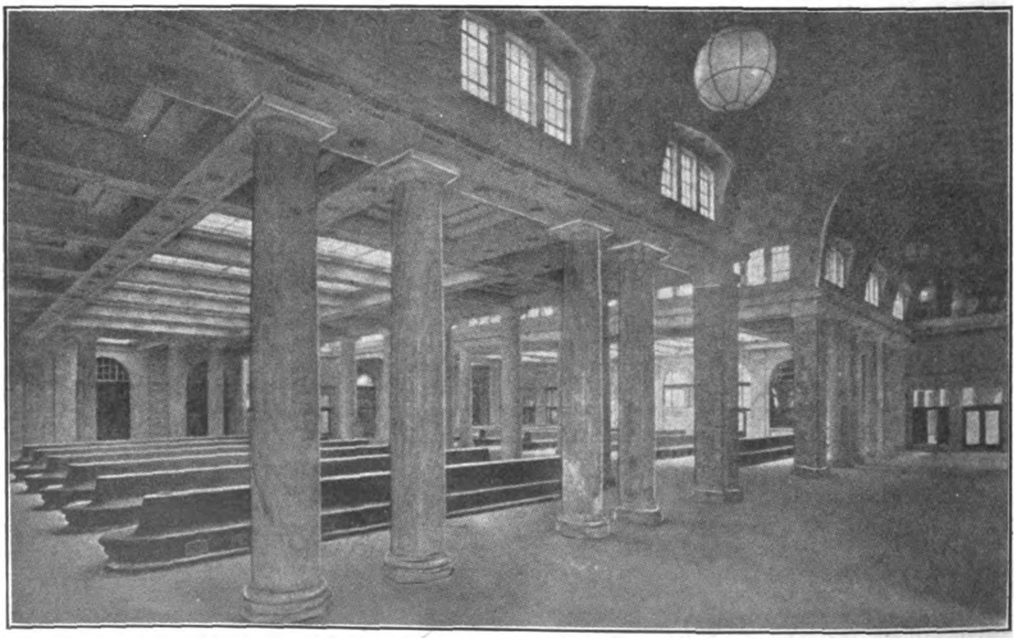
THE new passenger station of the New York Central Lines at Utica, New York, which was opened recently, is as the accompanying illustrations indicate, a splendid structure. The building is three stories high, 192x204 feet. The front of the station is set back from the street line 18 feet and there are two main entrances on the front covered by heavy marquises. Auxiliary entrances are also provided on both sides of the building. Structurally, the station has a steel frame with Bedford stone facing up to the first floor and grayish rough textured



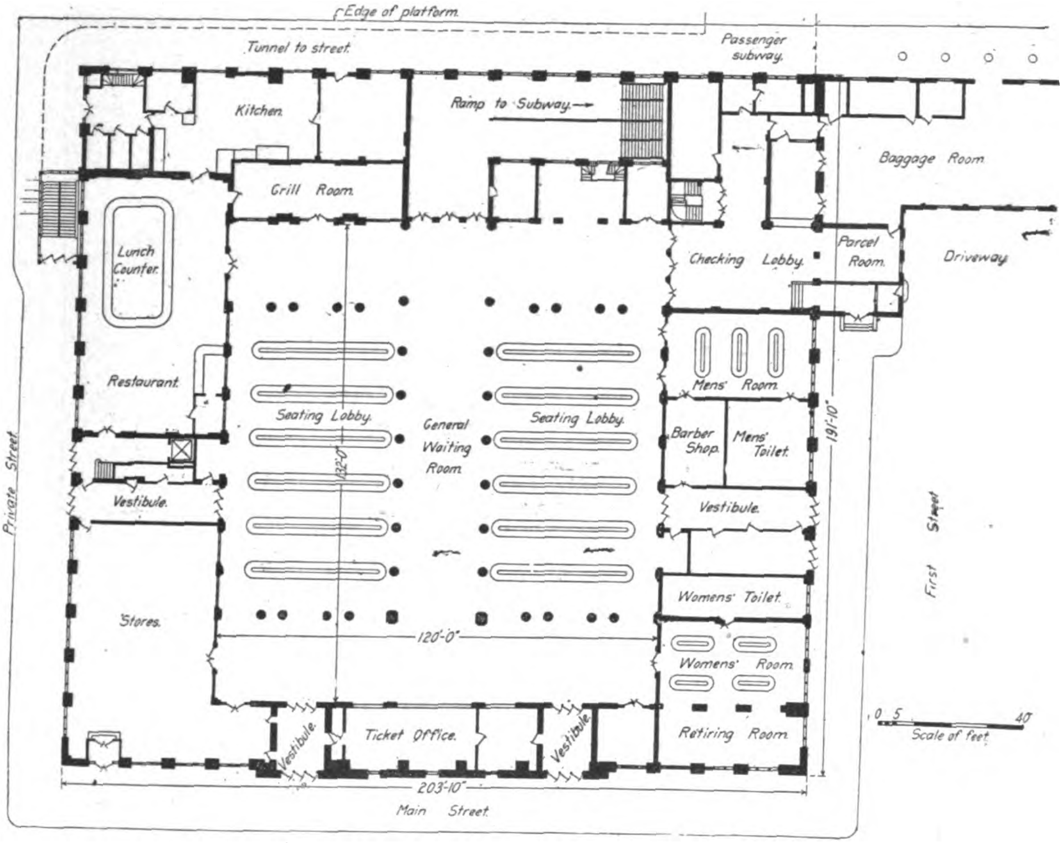
New York Central Line's New Passenger Station at Utica, N. Y.

brick for the remaining height. Limestone trim is used throughout.

The two main entrances on the south front of the building open through enclosed vestibules directly into the main waiting room, which is 120 feet by 132 feet, divided by rows of marble columns into a central and two end passageways and two seating lobbies. The central passageway continues to the north wall of the building where a connection is made with the passenger subway. Each seating lobby contains six double seats. The total capacity is about 400 people. All facilities for handling passenger business are grouped around this main waiting room, including the ticket office, information booth, the women's rooms, barber shop, men's rooms, parcel room and baggage check room, news stand, grille room, restaurant and lunch room. A large rental space, which will be occupied by a store, is located in the southwest corner. The floors in the main waiting room, men's rooms and restaurant are of terrazzo, in the vestibules and ramp leading to the subway of paving tile,



Interior of New Passenger Station.


Edge of platform
Tunnel to street
Passenger subway
Kitchen
Ramp to Subway
Baggage Room
Grill Room
Lunch Counter
Checking Lobby
Parcel Room
Driveway
Restaurant
Mens' Room
Seating Lobby
General Waiting Room
Seating Lobby
Barber Shop
Mens' Toilet
191'-10"
132'-0"
Private Street
Vestibule
Vestibule
First Street
Womens' Toilet
Stores
120'-0"
Womens' Room
0 5 40
Scale of feet
Vestibule
Ticket Office
Vestibule
Retiring Room
203'-10"
Main Street

Ground Floor Plan of New Passenger Station at Utica, N. Y.

in the women's rooms of cork tile, and in the grille room of quarry tile.

The building contains two main office floors. Provision has been made for two elevators, one of which has been installed. The floors in the office portion of the main building are of steel and concrete construction, the corridor floors being finished with a cement surface and the offices with wood. The structure is made fireproof throughout.

The baggage house is a brick building with limestone trim. It is 604 feet long and 36 feet wide. It includes a baggage room, mail room and offices and storeroom for the National and American Express Companies.

The track layout at the passenger station includes twelve station tracks served by six platforms, twenty feet wide and with a maximum length of 1,200 feet. Two through tracks for fast freight and passenger trains which do not stop at Utica, are carried through the middle of the layout and are not adjacent to any platforms. The platforms are covered with canopies 600 feet long with provision for extension over the full length of the platforms. Each platform is reached by two stairways from the passenger subway below and by an elevator from the baggage subway.

New Terminals at Tacoma, Washington.—The Oregon-Washington Railroad Co. has awarded to O. F. Larson, of Tacoma, the contract for building its new freight house here. The Missouri Valley Bridge Company, of Leavenworth, is building a $300,000 bridge across the city waterway leading to the freight terminals. Other contracts will cover many miles of sidetracks and switching yards. The company is constructing these terminals five years later than originally intended.

Gould Line Authorized to Provide for New Orleans Terminal.—The St. Louis, Iron Mountain and Southern Railway has applied to the Public Service Commission of Missouri for authority to jointly guarantee with the Texas Pacific Railroad $7,500,000 in bonds to be issued by the Trans-Mississippi Terminal Company for the construction of passenger and freight depots, warehouses, wharves and docks and to acquire land for terminal facilities at New Orleans. The Iron Mountain has an agreement with the Texas and Pacific and the New Orleans Pacific Railroad to use their track from Alexandria, southern terminal of the Iron Mountain to New Orleans, this agreement to be subject to the approval of the stockholders at the meeting to be held September 8th at St. Louis. This agreement was made June 15, 1914. The Texas and Pacific and the Iron Mountain own jointly in equal shares the $100,000 of stock of the Trans-Mississippi Terminal Company. They acquired it to establish joint terminals in the City of New Orleans.

Santa Fe's New Union Depot and General Office Building at Galveston.—The Santa Fe has recently completed its new Union Depot and

THE NEW GENERAL OFFICE BUILDING AND STATION OF THE SANTA FE, AT GALVESTON, TEXAS.

general office building at Galveston, Texas. This magnificent structure, eight stories high and 100x125 feet, is built of vitrous buff brick and concrete, and rests on a re-inforced concrete foundation. The building is thoroughly fire-proof, the partition walls being of hollow tile. English stained oak has been used in interior wood work and the corridors with marble base and cement floors, combine utility with ornamental effect. On the ground floor are the main waiting room, ticket office, ladies' rest room, lunch room, etc., and a commodious baggage room adjoins the office building on the west. Both the new depot and the general office building rank with the most substantial business structures in Galveston.

Extensive Shops to be Constructed by Yazoo & Mississippi Valley.—The Yazoo & Mississippi Valley Railroad Company will, it is announced by local officials of the Illinois Central System, establish at Nonconnah, just below New South Memphis, the largest car building and locomotive repair shops south of Chicago. It is declared that these will give employment to at least 4,000 men and that a large percentage of the force of workmen now at McComb City, Miss., and Paducah, Ky., will be removed to Memphis when these improvements have been completed.

These two companies are also constructing new yards in New South Memphis. It is proposed to have these yards in readiness for use within the next few months and it is planned to have the new railroad shops ready for operation within another year.

St. Paul's New Office Building.— Contracts have been let for the construction of a 3,500,000 building in St. Paul to house the general offices of the Great Northern and the Northern Pacific Railroads.

New Union Station for Dallas, Texas.—The contract for the new Union Station and terminals at this city was let to John W. Thompson, a railroad and general contractor of St. Louis. In addition to the new station building, the contract includes rearrangement of terminal tracks and a bridge across the Trinity River. It is estimated that the entire contract will amount to $3,000,000. All the railroads entering Dallas, eight in number, are to use the new station and terminals, and the work is being paid for by them jointly.

Kansas City Station Nearing Completion.—Work on the Kansas City Union Station and terminal is now almost completed. The new station and train shed cover eighteen acres, and are the largest west of New York City. The total cost of work will be $75,000,000.

Work to Begin on Denver's New Passenger Station.—It is expected that ground will be broken about September 1st for the construction of the new union passenger station to be erected at Denver, Colo., at an approximate cost of $10,000,000. The roads interested are: the Union Pacific, Burlington, Denver & Rio Grande, Colorado & Southern and the Santa Fe.

Terminal Improvements at Buffalo.—In the course of the next year or two between $15,000,000 and $17,500,000 will be expended in improving the railroad terminals in Buffalo.

Plans for the new $5,000,000 Lehigh Valley Station have been accepted by the Buffalo Terminal Commission and the contracts will be awarded before August 1st. Though owned by the Lehigh Valley the terminal will be virtually a union station, as Erie, Nickel Plate, Wabash and the Grand Trunk will be joint occupants.

At present Erie, Nickel Plate, and Wabash use the same station and the Grand Trunk is in with Lehigh Valley in its present terminal.

In addition to the Lehigh Valley improvement, work is progressing on the new Lackawanna station, which will cost in all about $2,500,000 and plans are being developed for a new terminal by New York Central, which will run close to $10,000,000 as at present outlined.

Interstate Commerce Commission

(Abstract of Decision in the Five Per Cent Rate Advance Case, Including Dissenting Opinions of Commissioners McChord and Daniels.)

THE following is the majority opinion by Chairman Harlan:

The Interstate Commerce Commission on June 21, 1913, ordered a proceeding to inquire into the following matters:

1. Do the present rates of transportation yield the common carriers by railroad operating in official classification territory adequate revenue?
2. If not, what general course may carriers pursue to meet the situation?

In adopting this plan for the investigation the Commission was not unanimous. Two of its members dissented on the general grounds that until the proposed increased rates had been filed as required by law there could be no effective basis for the inquiry and no legal warrant for a finding or for an order based thereon. To avoid any such question of law, the carriers on October 15, 1913, filed tariffs providing increased rates on practically all freight traffic moving in official classification territory. These tariffs were suspended by the Commission.

The rates now proposed by the carriers are commonly spoken of as providing a five per cent increase in freight charges. As a matter of fact the increases range from less than three per cent on some traffic, and as high as fifty per cent in certain short haul traffic.

The additional revenue expected to accrue under the rate advances discussed in a case of 1910, was estimated at $27,000,000. The increased revenue under the proposed advance here under consideration, as estimated by the carriers' experts, would aggregate about $50,000,000.

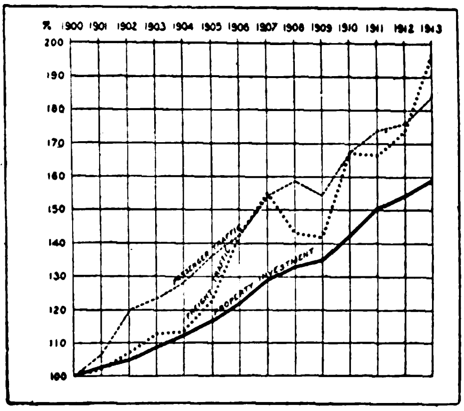
On November 24, 1913, the hearings were commenced and were continued at intervals until May 1, 1914. The record was closed so far as the first question in the general investigation is concerned, except as to certain inquiry formally addressed to the carriers by the Commission, to which they have not yet fully responded, and except as to the relations of the Baltimore & Ohio with the Cincinnati, Hamilton & Dayton, concerning which a hearing was had on May 29, 1914.

Protests against general increase in freight rates were presented by the railroad commissions of Iowa, North Dakota, South Dakota, Nebraska, Kansas, Oklahoma, Arkansas and Missouri, and by the National Council of Grain Dealers' Association, and the Farmers' Association of Iowa. Protests against increase in lake and rail rates were presented by the Chicago Association of Commerce, and the Board of Trade of Duluth. Protests against proposed increases in rates so far as they effected specific articles of which the tonnage in some cases is large were presented by many shippers, particularly by shippers of coal, coke, ore, brick, cement, lumber, ice, sand, gravel, paper, pulp, corn products and petroleum. The hearing of these special protests occupied 36 days.

The general duties that common carriers owe to the public are well understood. They must provide prompt and safe service and they are held to strict responsibility for injuries or damage to property which they undertake to carry and for which they are under obligation not to charge an excessive rate for the services. This was a rule of common law, and it has been emphasized by specific legislation; on the other hand we cannot doubt that there are responsibilities on the part of the public to members of privately owned companies.

Investors in railroad securities share part of the consequences of dishonesty or inefficiency on the part of those selected to manage the properties. No one could reasonably contend that the public should pay higher transportation rates because once prosperous properties like the New Haven, Chicago & Eastern Illinois, the Alton, the Frisco, or the Cincinnati, Hamilton & Dayton, may now be in need of additional funds as a consequence of mismanagement. Investors in railroad securities must also take the risk of those errors of judgment which not infrequently attend the careful management of enterprises conducted for profit, but they likewise should be permitted to enjoy fully the profits which naturally flow under reasonable scale of rates, from the exercise of good judgment, integrity and efficiency in the management of the properties. The public owes to the private owners of these properties, when well located and well managed, full consent to earn a fair return on the investment, and the carriers owe to the public an efficient service at reasonable rates.

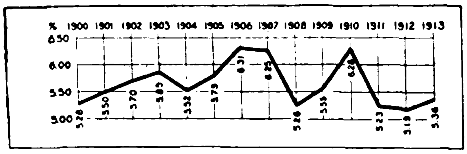
The property investment of the 35 railway systems in official classification territory, as shown by their exhibits, aggregated about $3,787,000,000 on June 30, 1898. The return upon this amount in net operating income for that year is stated at 4.39 per cent. During the next few years conditions in the transportation world improved rapidly. In 1900 the property investment as reported stood at about $3,952,000,000. The net



Comparison of increases in capital investment and traffic, 1900 to 1913 inclusive.

operating income for that year is stated at 5.28 per cent. In 1903 their property investment was reported at about $4,300,000,000. The net operating income for that year reached 5.85 per cent. It is obvious that if we select either the low ratio of the net operating income for 1898 or the high ratio of 1903, as a basis for comparison, some very unsound inferences may result. All things considered, it is clear that in place of a comparison of one particular year or period with another, we must take a more comprehensive view of the trend of railway earnings. We shall, therefore, begin our examination with the year 1900, omitting the years 1898 and 1899, which show relatively low earnings and appear not to be fairly representative of railroad conditions.

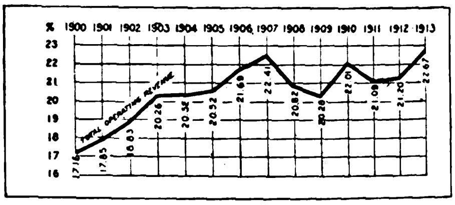
During those 14 years the property investment of these carriers has increased from $3,952,000,000 to $6,281,000,000. This represents an advance in the property investment account of 59 per cent. The operating revenue shows a far greater advance during the same period of years, having increased by 110 per cent. It will be noted, however, that the operating expenses increased even more rapidly, or by 133 per cent in the 14 years, the result being that the net operating revenue shows a lower ratio of increase than does the gross revenue. Expressing the thought in a more definite form, it may be said that in 1900 it cost the carriers 64.62 cents in operating expenses to secure $1 of revenue, while in 1913 the cost had risen to 71.77 cents. Had the operating cost of securing their revenue remained the same in 1913 as in 1900 the net operating revenue of these carriers in 1913 would have been greater than it was by more than $100,000,000. The taxes increased during that period in about the same proportion as did operating expenses; but the decrease in the capital cost per unit of production was so great that the ratio of net operating income to property investment was larger in 1913 than it was in 1900. The explanation of this reduced capital cost is due mainly to two facts; first, the advance in the art of railroading; and, second, the increase in the density of traffic, both resulting in the greater utilization of the plant.



Ratio of Net Operating Income to Property Investment.

We have already mentioned the fact that the returns of these carriers in gross operating revenues have increased much more rapidly since 1900 than the property investment. It will be observed, however, from the accompanying chart, showing the ratio between the two accounts, that while the gross revenues, as compared with property investment, increased quite regularly from 1900 to 1907, they have remained practically stationary, with some fluctuations, since the latter date. This has been due not to a relative decrease in the volume of the traffic moved but largely to a decreased return per ton mile and per passenger mile since 1904, and especially during the years 1906 to 1913. If the ton-mile and the passenger-mile rates earned in 1906 had been repeated in 1913 the net operating income of the carriers during the latter year would have been at least $30,000,000 greater than it actually was.

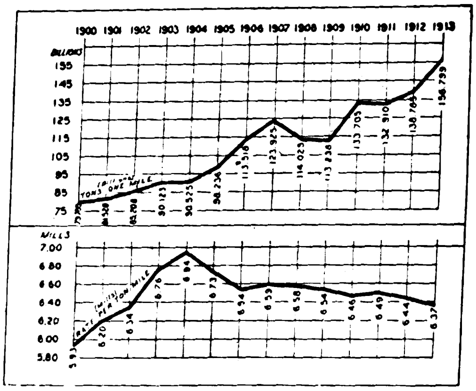
There is, however, no basis of record for the assumption that the reduction in these earnings per ton mile has been caused wholly by the adoption of lower rates for the service. There are many factors, other than rate reductions, that affect the earnings of carriers per ton mile.



Ratio of Total Operating Revenue to Property Investment.

Without any reduction whatever in the charge for the service a reduction in the revenue per ton mile will be brought about by a relative increase in the length of haul or in the volume of traffic taking low rates. A very marked reduction in revenue per unit of service results also from the absorptions occasioned by payments for switching, lighterage, elevation, etc. The record indicates that some of the decrease in the yield per ton mile was due to voluntary rate reductions by the carriers; some rate reductions have also resulted from the orders of this Commission and from the orders of State Commissions. But it may fairly be assured that the causes that we have just mentioned were more influential than any lowering of the rates on freight.

The reduced earnings on passenger traffic were caused largely by reductions which the carriers were compelled to make in their passenger fares in Ohio, Indiana, Michigan, Illinois and in other States, under local legislative action. We shall refer later to this very important phase of the case, but it is proper to say at this point that the returns made by ten of the roads, representing only a portion of the mileage in what is known as central freight association territory, show that during the period from 1906 to 1913, inclusive, there was an estimated loss of nearly $18,000,000



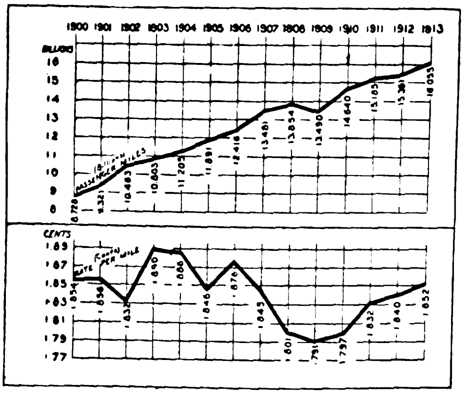
Freight Traffic and Revenue per Unit.

in revenues due to State legislation under which those carriers were compelled to make substantial reductions in their local passenger fares with accompanying reductions in their interstate passenger fares.

Another cause which has depressed the ratio of revenue to investment in recent years, is the increasing proportion of investment in property, which, although used in transportation and acquired in response to a public demand for better service, is relatively unproductive under present practices. Among other things, investments in equipment of improved type, displacing other equipment of equal capacity, the elevation of tracks, and the construction of expensive terminal facilities in the large cities, while adding to the value of the service rendered, have not yielded proportionate returns in revenue. The greater part of these expenditures has been for the immediate benefit of the passenger service.

The carriers were also prevented from realizing the full benefit of the increase in gross earnings by the great increases in operating expenses and taxes.

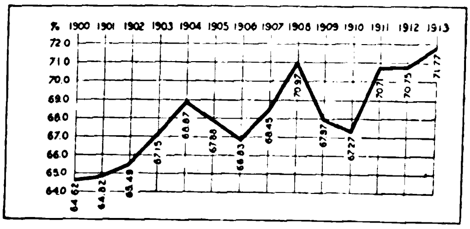
At two points, 1906 and 1910, the rising line in the operating ratio has been interrupted; but both those years were periods of relatively large railroad earnings. The lower operating ratios of those two years were obviously due to the greater density of traffic; and conversely the higher operating ratios of 1904 and 1908 were due to the lower density of traffic incident to the business depression during those years. There were also large revenues in 1911, 1912 and in 1913, but they were offset by the large increase in wages and other operating costs during that period, in consequence of which the operating ratio was held at a high level.



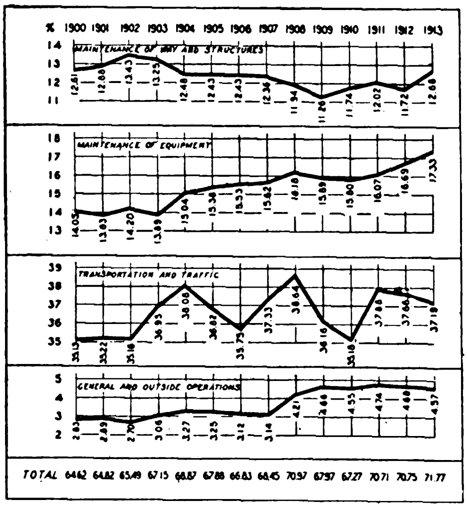
Passenger Traffic and Revenue per Unit.

Each of the different groups of expenses has played a part, but not an equal part, in increasing the operating ratio of railroads. The advance in relation to revenues of the last group of expenses, shown on the table and charts as general and outside operations, has been confined almost entirely to the expense of conducting outside operations, such as boat and ferry lines, harbor terminal transfers, sleeping, dining, and special car services, grain elevators, stock yards, hotels and restaurants. Many of these enterprises result in substantial losses to the carriers; and they often involve services for which no charge is made or for which the charge when made is unremunerative. The expenses incident to these so-called outside operations have grown rapidly in recent years.

The transportation and traffic expenses, as shown on the above chart, have very substantially advanced in ratio to revenue during the 14 years under review. This group includes expenses incident to the actual moving of traffic and the most important items are the cost of fuel and the wages of employes, both of which in recent years have been increased to such an extent as to account for a great portion of the total increase in operating expenses. Compilations made by the Commission of the answers of the carriers to its questions concerning fuel show that the average price of coal increased 7.7 per cent from 1910 to 1913. Exhibits filed by 30 of the 35 railway systems involved in this proceeding indicate an increase of 9.02 per cent in the average daily wage paid in 1913 as compared with 1909, and that if the scale of wages for 1909 had been in effect during 1913 the labor costs of the latter year would have been less by about $51,000,000 than they actually were. What part of this amount properly belongs to operating expenses and what part to the betterment and improvement accounts does not appear. It is interesting to note, however, that notwithstanding wages constitute an exceptionally large part of the transportation expense, this group of expenses has shown a relatively smaller advance than other groups. That the ratio was not still greater in 1913 is a tribute to the ability of operating officials and an evidence of the possibilities in the direction of economy. A relatively small portion of the increase was made necessary by the so-called full crew and hours of service laws and similar federal or state statutes. A substantial part of the increase in this group has been due to the increase in the special services performed at terminals and elsewhere without the imposition of any charge or for an



Ratio of Operating Expenses to Operating Revenues



NOTE.—Prior to 1908 the expenses of outside operations were not separately kept but were distributed among the other groups. This accounts for the sudden rise in the ratio line for general and outside operations.

Ratio of Groups of Operating Expenses to Operating Revenues.

inadequate charge. Such special services, which are considered later in this report, include reconsigning, switching, storage, teaming, etc., the cost of performing which falls for the most part within the group of transportation expenses.

The most extraordinary increase in the operating expense accounts from 1900 to 1913 was in the maintenance group and especially in the maintenance of equipment.

The safety-appliance acts, boiler-inspection laws, state legislation requiring the elimination of grade crossings, and other enactments show the demands of the public for a higher standard of service; and a portion of the increase in maintenance charges is due to such causes. These laws, to no small extent, enforce measures of precaution which the carriers ought to take and which they would voluntarily have taken in many particulars in pursuance of sound railway policy and practice. It is, nevertheless, true that in many cases they have had the effect of hastening improvements in equipment and roadway that would have come later, and of burdening the maintenance expenses of the years in which the improvements were made. Wise policy requires that a railway property should be kept up to the level of its highest reasonable efficiency at all times; and the postponement of needed repairs either in road or equipment because of a temporary falling off in revenues can not be justified or be regarded as true economy.

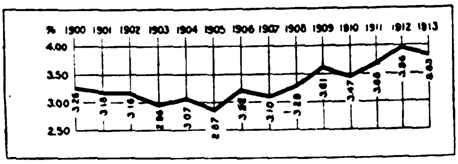
Findings as to the Adequacy of Present Revenues.

In view of a tendency towards a diminishing net operating income as shown by the facts described we are of opinion that the net operating income of the railroads in official classification territory, taken as a whole, is smaller than is demanded in the interest of both the general public and the railroads; and it is our duty and our purpose to aid, so far as we legally may, in the solution of the problem as to the course that the carriers may pursue to meet the situation.

The financial condition of the various railroads composing the 35 systems varies greatly, as disclosed by their net corporate income as well as by their net operating income. The condition of some of them is so prosperous that they clearly do not need a higher net income; the condition of others is such as to preclude the expectation of a return upon outstanding capital stock or the possibility of raising much additional capital without a thorough reorganization.

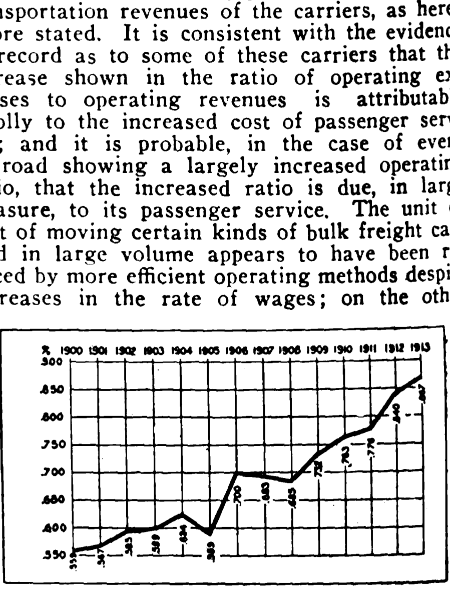
Treating as one road the 35 railway systems that have joined in this application for our approval of a so-called five per cent advance in their freight charges, we have reached the conclusion that their net operating income is insufficient and should be increased. We proceed now to consider under our general order of inquiry "what general course may carriers pursue to meet the situation."

They proposed but one remedy—the so-called five per cent increase in freight rates. As that remedy was offered through the formal filing of tariffs, we are legally bound to adopt it, if the new rates are just and reasonable, even though it may not seem to us the best remedy available. But we are unable upon the record to find that the rates so proposed are just and reasonable, except as hereinafter stated.



Ratio of Taxes to Operating. Revenue.

The proposed advance in rates is limited to freight traffic; and it does not extend even to all the traffic of that character. Yet practically every railroad seeking approval of these increases in freight rates maintains a passenger service also; and passenger train revenues amount to more than 24 per cent of the total transportation revenues of the carriers, as heretofore stated. It is consistent with the evidence of record as to some of these carriers that the increase shown in the ratio of operating expenses to operating revenues is attributable wholly to the increased cost of passenger service; and it is probable, in the case of every railroad showing a largely increased operating ratio, that the increased ratio is due, in large measure, to its passenger service. The unit of cost of moving certain kinds of bulk freight carried in large volume appears to have been reduced by more efficient operating methods despite increases in the rate of wages; on the other



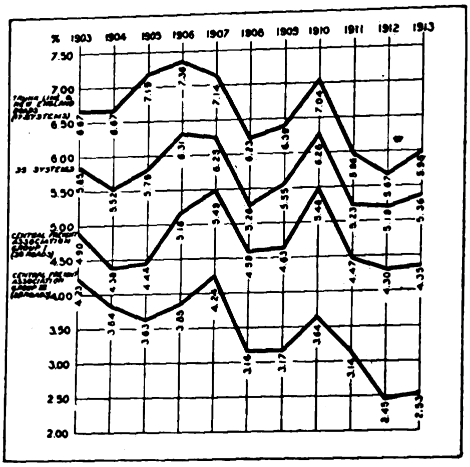
Ratio of Taxes to Property Investment.

hand, the unit cost of moving passengers has been almost uniformly increased independently of the effect of wage advances, through the use of heavier equipment, the adoption of safety devices, and better service.

Passenger fares are paid directly to the carriers by those making use of the service, and they know what it costs them. Payments for freight charges, while less direct, are none the less actual. The general public does not know, and probably does not stop to consider what proportion of the cost of a ton of coal, or of the price of a dwelling, or the rent of an apartment represents freight charges, but the cost of freight transportation enters into the cost or selling price of practically everything used by the public. In many cases, to be sure, freight charges represent but a small proportion of the total cost of things used or consumed, but it is quite probable that the average family pays much more in the course of a year as freight charges than it does for passenger fares. We know of no provision of law under which we should be justified in increasing freight rates to provide a return upon property used exclusively in the passenger service, much less to take care of losses incurred in such service. In our opinion each branch of the service should contribute its proper share of the cost of operation and of return upon the property devoted to the use of the public.

But even if the evidence clearly established an increase in the general freight operating expense ratio, we should not be at liberty on this record to conclude that the cost of transporting each kind of freight had increased, much less that it had increased proportionately. The evidence is clear that as to certain classes of bulk or heavy freight, like coal, coke, ore, cement, brick, tile, clay and plaster, the use of larger cars must have reduced operating costs, whereas in respect to expedited package freight, shipped in cars moving on a regular schedule regardless of the quantity of their contents, the use of larger cars, involving greater unused car capacity, must have increased the operating costs. Similarly the extension of the expedited service in carload freight must have increased the cost, while the heavier train loading of the slow train, in which the heavy or bulk freight usually moves, has tended to decrease the cost.

There is a wide difference in the character and profitableness of the traffic moving under substantially similar conditions in different parts of official classification territory. That territory is divided into three parts: The New England territory, with 8,071 miles of railroad reaching a population of 1,389 persons per mile; the trunk line territory, with 23,777 miles of railway line and a population of 889 per mile; and the central freight association territory, with 35,849 miles of railroad and a population of but 506 per mile. In the New England territory only 17 per cent of the population is rural, in trunk line territory 30 per cent is rural, and in central freight association 46 per cent. With 2,000,000 less population than trunk line territory, the area of central freight association territory is 74,000 square miles greater and is traversed by 12,072 more miles of railroad; it embraces nearly three times the area of the New England territory and is traversed by 27,778 more miles of railway. Its navigable lakes and rivers constitute one of the influences affecting the level of the rail rates now prevailing there. In the New England territory there are no coal mines, and a large part of the traffic is of a high-grade character. In trunk line territory the products of mines furnish a large part of the tonnage, while on group III of the central freight association lines the traffic is more diversified. The differences in the freight earnings per ton per mile are illustrated as follows:



Comparison of Ratios of Net Operating Income to Property Investment.

Illustration of Differences in Earnings per Ton-Mile in Three Territories

Names	1910 *Cents.*	1911 *Cents.*	1912 *Cents.*	1913 *Cents.*
Boston & Maine	1.085	1.095	1.089	1.054
New York, New Haven & Hartford	1.417	1.390	1.371	1.345
New York Central lines east of Buffalo	.642	.647	.653	.623
Pennsylvania lines east of Pittsburgh	.618	.619	.617	.617
Central freight association lines	.570	.573	.575	.563

Readjustment of Central Freight Association Rates.

The testimony tending to show that a readjustment of rates in central freight association territory is what is needed was not disputed. The class-rate structure is honey-combed with inconsistencies.

The attitude of the officials of the roads operating in central freight association territory, as disclosed on the record, indicated that they joined in this proceeding not because they thought the so-called five per cent increase of rates would meet their requirements or that this form of relief is appropriate in central freight association territory, but only because of the desire of other and more powerful lines operating in trunk-line territory to present to us in this proceeding one general plan of relief. These officials, while stating that the so-called five per cent increase would add substantially to their revenues, expressly condemn the present basis of rates as unsuitable and unsatisfactory. The leading railroad witness on the question affirmed, with some earnestness, that "the class rates do not sustain any logical relation to each other," and that under the present basis of rates "certain shippers of certain classes of freight have not for years borne their share of the burden of transportation, and in addition to the rates being extremely low they are unscientific and illogical."

CONCLUSIONS.

In what has preceded we have found, treating as one road the 35 railway systems in official classification territory that have asked for this so-called five per cent increase in rates, that their net operating income is insufficient and should be increased. There remains for consideration the question whether the proposed increases in rates should be approved.

We have seen that the class rates in central freight association territory are on a lower scale than can be found elsewhere in the country, and that many of the commodity rates are too low and are probably unremunerative, considering the diversified nature of the traffic. The class rates and many of the commodity rates may therefore with propriety be increased. This approval, however, is subject to the following limitations:

(a) With respect to certain heavy commodities, namely, brick, tile, clay, coal, coke, starch, cement, iron ore, and plaster protestants made such a showing as to constrain us to hold that the carriers have failed to sustain their burden under the statute.

(b) Reference has therefore been made to the fact that the proposed tariffs are based on a minimum increase of five cents per ton on all commodities moving under rates stated in cents per ton when less than $1 per ton; with respect to certain hauls, this would result in increases much in excess of five per cent and in certain cases the increases would be as high as 50 per cent. The carriers have failed to establish the propriety of this minimum increase, and the evidence offered by the protestants makes it clear that it would work hardships and discriminations and can not be approved, since under it a disproportionate burden is cast upon the heavy short-haul traffic.

(c) The tariffs also name many other rates involving increases exceeding five per cent by varying amounts; these rates also must be condemned as throwing upon the traffic affected by them a disproportionate burden, for which no justification has been shown.

(d) There may be also a number of rates throughout central freight association territory that still are controlled by the force of unexpired orders of this Commission, entered after specific investigations in formal cases. No showing has been made why those orders should be modified.

Except in respect of the rates above referred to we are of the opinion that the proposed intraterritorial rates in the central freight association territory have been justified by the carriers and may be put into effect.

We find that the financial condition of the trunk-line carriers does not warrant a general increase of freight rates and shall also show that the needs of the New England lines are being cared for locally. The carriers failed to prove either that the existing rates in trunk-line or New England territories are too low or that the increased rates proposed for those territories would be just and reasonable rates. Nor have they proved that the existing interterritorial rates in official classification territory are too low or that the proposed increases in those rates would be just and reasonable. The carriers will be required therefore to cancel all the tariffs in which these rates are proposed.

Upon the whole record we find that the carriers have not met the burden of justifying their proposed increased lake-and-rail rates. On general grounds, also, those increases must necessarily fall with the fall of the increases in the all-rail rates. The carriers that have published such rates will therefore be required to cancel them except in so far as any increase here approved in central freight association rates may require, under established bases, some increase in the rail-and-lake rates or in the factors upon which those rates are based.

Increased revenues resulting from increases in rates in central freight association territory will afford some relief to practically all the lines in official classification territory which are in need of additional revenues, except the New England lines. The latter roads have only a relatively small interest in this proceeding, and their requirements are being considered locally in conferences with the state authorities and others. It will also aid several large roads not included in the 35 systems and more than 30 small roads in central freight association territory which appear to be in greatest need.

In the conduct of these inquiries the Commission has not had the full co-operation of the carriers and the shippers have not had an opportunity of being fully heard. For these reasons our suggestions as to the steps to be taken to secure additional revenues are to be regarded as tentative merely. The information collected and put on record convinces us, however, that great opportunity exists for increasing the net revenues of all carriers in official classification territory, otherwise than by resorting to a general advance in their freight rates.

The practice of granting free transportation of passengers and private cars, although less general than formerly, in part because of prohibitory legislation upon that subject, is still a heavy burden upon the railway passenger service, and it is recommended that the practice be still further restricted by the carriers.

Compilations prepared by the Commission show that the revenue from private cars handled free during the year 1913 on 88 of the roads which have made answer to our question would, at tariff rates, have amounted to $644,250.79.

We suggest a careful review of methods for increasing freight-car efficiency. In certain departments of railroading great advances have been made in efficiency in recent years; for instance, by increasing the train loading. On the other hand, the cost of the freight car as an element in the cost of transporting goods seems to have grown greater instead of less. The capital cost of equipment has increased more rapidly within recent years than the capital cost of the road. The ratio of the maintenance of equipment expense to gross revenue has grown largely, but it is not unreasonable to expect that such added costs can be overcome, as they have been in some other departments of railroading and in many other industries, by advances in management and methods. It is, however, in the use and operation of cars that we must look for the most substantial economies.

It was insisted during the hearings that the carriers are facing a crisis and that the need of relief is so urgent as not to permit of the orderly investigation of the possible sources of additional revenue other than by the proposed freight rate increase. The executives admitted the propriety and need of a general readjustment of many of their present rates and practices, and the possibility of further economies and of increased efficiency; but they insisted that grave and serious responsibilities would be incurred if we failed to relieve the situation by at once approving the proposed five per cent increase in rates. The principal danger suggested was that the carriers would encounter great difficulty in renewing their maturing short-term notes and other obligations unless investors were assured that the carriers' revenues would be increased immediately. Subsequent developments have shown that there was little foundation for any such view. During the world-wide financial stringency prevailing in 1913 the railroads, in common with states, cities and the industries, found it difficult to secure loans, however good the security, but with the growing ease in the money markets this difficulty has largely disappeared. According to the standard financial journals, nearly $500,000,000 of bonds and notes have been disposed of by the railroads since January 1, 1914. Recently $35,000,000 of Baltimore & Ohio Railroad Company short-term notes were taken at par in an afternoon. The interest rates exacted were undoubtedly high as compared with those prevailing generally during the 14 years preceding, but the burden of high interest rates is not confined to railroad securities.

The credit of our railroads has undoubtedly suffered in recent years, but largely from causes that were independent of their rates. Their borrowing power has suffered relatively, because of the great competition for money by governments, states, municipalities, public-service corporations and industries. It has suffered actually because of the mismanagement of great railroad systems of international repute. The conspicuous decline in the securities of certain railroads and the circumstances leading up to the appointment of receivers for others have impaired the confidence of the public in the stability of railroad securities. This feeling of insecurity has been increased, first, by the fact that recklessly mismanaged railroads have been largely under the control of powerful banking houses theretofore considered conservative; and, secondly, by the fact that the great railroad systems have become interlocked with weak lines either directly through stock ownership or by common directorships or otherwise.

The credit of some of our leading railroads has also been strained by the too free use of it in unwise and sometimes disastrous extensions of their lines, and even more seriously by the acquisition of properties not forming a part of their railroad system or used at all in transportation service. The campaign of publicity hereinafter referred to has also increased the strain on the credit of the railroads. But the earning capacity of our railroads is so great that their credit will soon be restored if their revenues are conserved. The crop estimates give promise of greatly increased gross revenues for the current fiscal year.

The Campaign of Publicity.

The letters and telegrams received disclosed an unmistakable purpose to hurry the Commission to a conclusion before the record had been closed and before there could be an opportunity to hear, much less to consider, the testimony that the protestants and others desired to offer in protection of what they conceived to be their interests as shippers. Respectable journals joined in demanding the immediate approval of the proposed rates. Cartoons appeared in the public press depicting the Commission as an obstruction to progress and prosperity, as if increasing the burdens of commerce by an increase in the rates for its transportation was the only solid foundation for our permanent prosperity. One traffic association offered to deluge the Commission's offices with thousands of telegrams; other organizations started chains of letters, some of which, in identical language, are still reaching the offices of the Commission from widely separated parts of the country; others took the trouble to send to members of the Commission clippings from newspapers and magazines containing editorials and news items relating to the case and denouncing our delay in disposing of it. All this was done regardless of the fact that the Commission is under the express statutory obligation of affording a full hearing in such matters to all who desire to be heard and have reasonable grounds for a hearing.

Most of these communications were doubtless well intended, but they have not been helpful. Those that have been examined disclose that the writers were without any real understanding either of the many intricate questions involved in the investigation or of the facts disclosed upon the record; and they show little appreciation of the statutory standards by which we must be controlled when considering the rates and practices of carriers. Many asserted that business was dull and that an increase in rates "would give things a start." The general thought running through practically all the communications was that new enterprises were being held up; that men were out of employment; that business was in need of a stimulus; and that the laying of an additional burden upon commerce through increased freight charges would be a sufficient tonic to start a general forward movement, because the railroads themselves would then become large purchasers of supplies. The law fixes the standards by which the rates and practices of carriers must be judged and the Commission can act only in accordance with those standards and after a full hearing; we have no authority to approve rate increases with a view to stimulating business. Nevertheless, the writers of many of these letters urged immediate action by the Commission on the ground that the prompt approval of the increased rates would "restore confidence" in the financial and business world and that such a result in itself would be a sufficient basis for action by the Commission; and in many cases they frankly stated that they would prefer an increase in rates rather than a continuance of the present dullness of trade because the burden of increased rates could "be passed along to the consumer."

Mr. Willard, president of the Baltimore & Ohio Railroad Company, and chairman of the committee of executives in charge of the presentation of the case of the carriers, while frankly admitting that the carriers had established a publicity bureau for the purpose of accurately advising the press and shippers of the facts developed upon the record, disclaimed any personal responsibility for the propaganda, and definitely stated that his personal endeavors were limited to an effort to have the facts correctly laid before the public. Whether other and subordinate officials of the carriers may be responsible we do not know, nor have we sought to ascertain. There can be no doubt, however, that this clamor and outcry have tended to mislead the public and have seriously aggravated the present commercial depression.

This matter is referred to because of its general impropriety and because it shows the existence of a widespread misconception as to our powers and duties.

We may justly feel proud of the development of our transportation system. Despite occasional discreditable chapters, the history of our railroads has been marked by great achievements. There is among the carriers a growing spirit of co-operation with the Commission in its efforts to enforce the law. With the application of correct and helpful accounting, the establishment of sound business methods, and a better understanding by both carriers and the public of their mutual obligations, to which we believe this investigation has contributed, the future is full of promise. We see no reason why our American railroads should not enjoy a large measure of prosperity consistently with just and reasonable rates.

In order to give effect to our findings and conclusions herein and to avoid confusion in establishing the rates herein approved, it will be necessary for the various carriers to cancel all the tariffs now under suspension; and an order to that effect will be entered.

Dissenting Opinions.

Commissioner McChord: To prevent in central freight association territory the increased rates proposed in the majority report and to deny increases to the trunk lines appears to me to be unwarranted by the facts of record and not in harmony with the general basis of rate adjustment that has so long existed in official classification territory, and I deem it proper to state briefly what seem to me to be certain practical reasons which lead me to this conclusion.

To disallow an increase in the joint through rates and at the same time allow an increase in central freight association territory to and from the Ohio River gateways would have the effect of allowing increased locals to central freight association lines on this through traffic at the expense of their southeastern connections, who would be expected to shrink their earnings to the extent the central freight association lines increased theirs.

The two subdivisions of this territory, to wit, central freight association and trunk line, constitute one great industrial community which supplies the bulk of the manufactured products of the country and through which move the great streams of east and west bound commerce. The two territories are divided only by an imaginary line.

Within each territory are some of the greatest commercial centers of the country, each in active competition with the other in the purchase and sale of raw materials and manufactured products. For many years the rates between these cities have borne a fixed and well understood relation each to the other. Commercial conditions have, to a considerable extent, come to be based upon this relationship and, in so far as is shown by this record, it appears to have given general satisfaction. It must follow that any general increase of rates within central freight association territory alone will change the rate relationship as between cities in that territory and cities in trunk line territory, perhaps to the advantage of the latter.

Viewed from a commercial, geographical, or transportation standpoint, and in the light of the facts of record, I am convinced that the reasons which impelled the Commission to approve certain changes in central freight association rates apply equally to trunk-line rates, and that the transportation conditions in the two territories are not absolutely so much unlike as to indicate the wisdom of dissimilar treatment of the rates proposed by the carriers in the entire official classification territory.

Commissioner Daniels: In the conclusions reached in the majority report I am unable to concur. Except as hereafter indicated, the five per cent advance should have been granted in trunk-line territory no less than in central freight association territory. To the extent that an increase is permitted upon rates in central freight association territory I concur. The majority opinion, however, falls far short, in my judgment, of giving even to the carriers in that region the relief to which the evidence of record clearly shows they are entitled.

For more than a decade the operating and maintenance expenses of the railroads of the United States have constantly risen. The rates charged, on the other hand, have been either static or declining. Unable to raise their rates without the sanction of this Commission, the railroads have found that the margin between their receipts and their outgo has progressively narrowed; that their net profit from operation has tended to decline; that their operating ratio —the number of cents out of every dollar received which are absorbed by the cost of conducting their business—has steadily increased. Despite recent investments of hundreds of millions embodied in extensions and improvements, the addition to net operating income has been meager in the extreme. In conspicuous instances, despite such additional investments, there has been an absolute decrease in net operating income; this decline in net earnings has occurred during a period when the carriers have handled an increasingly greater tonnage and carried more passengers than ever before. While they have been furnishing greater and better service, both in the transportation of freight and the carriage of passengers, their net operating income has at the same time progressively dwindled.

While the suggestions offered at the close of the majority report as to methods of conserving and increasing railroad revenue are, many of them, interesting and significant, others are more or less conjectural, and most of them remote in possible effect. This Commission is not constituted by law a board of general managers of the railroads of the country, and the assumption of rendering suggestions as to management ought never to delay or postpone the settlement of a plain matter of law and fact involved in an application for advanced rates.

The testimony offered by the carriers deals mainly with insufficiency of return. Such testimony is germane and proper. Evidence establishing general inadequacy of return impeaches the general reasonableness of rates which result in such inadequate return. It is not conclusive evidence that rates are unduly low, but it creates a reasonable presumption to that effect, and it suffices to meet the burden of proof cast by the law upon the carriers which propose rate advances.

Failure to advance passenger fares at the same time is no persuasive reason for declining permission to increase freight charges to a level that is just and reasonable. Peculiar difficulties center around the advance of passenger fares, and while they eventually ought to be made to bear their proper share of transportation expenses, their elevation under existing circumstances must in point of time inevitably follow comprehensive adjustment of freight rates.

To deny advances which would establish rates just and reasonable, and in consonance with changed conditions of costs and income, will but postpone a necessary and inevitable readjustment. It is true that the difficulties confronting the carriers may be temporarily lessened or even for a time offset by unusually heavy tonnage arising, for example, from exceptional crops; but in the ebb and flow of material prosperity from year to year these difficulties will reappear and, without adequate offset in the shape of higher rates or otherwise, will eventually become chronic.

The averment was made that the maintenance costs have been excessive, but it is significant that the majority report though canvassing this particular subject fails anywhere to find that the maintenance costs are excessive.

Certain of the carriers seeking to make this advance are charged with waste or other financial irregularities. The New Haven, which has been shown guilty of such practices in the past, is not interested, save to a slight degree, in the present decision; but even if a few vitally interested railroads had been shown culpable it would not change the conclusion, because it has already been demonstrated that where their lines are inextricably interlaced with other lines no practical distinction can be made in according advances. The attempt would defeat its own end. So with this in view the majority report accords, of necessity, the same advances to the Cincinnati, Hamilton & Dayton, the Pere Marquette, and other lines in central freight association territory whose administrative integrity has been impeached, as to the remaining lines in the same region whose management has not been questioned.

THE BURDEN OF PROOF UNDER THE STATUTE.*

It is clear that evidence of inadequate returns upon the fair value of property devoted to the public use is prima facie a showing that present rates are unduly low, and that rates higher than those current are presumably just and reasonable. To this extent revenue evidence is rate evidence; and revenue evidence applying to rates in their totality is rate evidence which applies to each specific rate.

The contention that the Commission may not pass upon rates as a whole, but that it is obliged under the law to consider and to pass separately upon each particular rate between every two points, is expressly and explicitly repudiated.

The obvious conclusion, both from reason and from precedent, is that the Commission may legally deal with rate schedules as a whole, and also that insufficiency of revenue is a proper ground upon which, nothing sustantial to the contrary appearing, to accord advances which will result in just and reasonable rates.

The further contention is made that the proposal of a five per cent advance upon existing rates presumes a relationship between particular rates which is just and proper; that there is no conclusive evidence of this fact; and that a five per cent advance would simply accentuate the disparities, inequalities and inconsistencies already interwoven in the rate fabric. It is clear that this contention can not have prevailed in the majority opinion. Had it done so the five per cent advance could not have been accorded in central freight association territory. There exists a presumption in favor of inter-relations in a rate fabric that have long continued undisturbed. Moreover, there are commonsense limits within which any attempts at a rate adjustment are necessarily confined. Every act of rate making necessarily carries vestiges of discrimination; the very classification of freight assimilates into one class many articles not identical in weight, bulk, value or fragility. The Commission is not called upon to do the impossible and to show such meticulous attention to the adjustment of fractions as to preclude the possibility of any readjustment of rates whatever. With a demonstration of inadequate revenues, and with a presumption in favor of the propriety of the interrelation between rates long in effect, an advance moderate in amount, calculated to produce but a reasonable increment in earnings, and affecting all traffic in the same proportionate degree, is the plain dictate of law and of common sense in the premises.

Another contention that sought to impeach the propriety of granting advances was founded on the idea that the failure to increase passenger rates simultaneously with the proposed advance in freight rates would impose on freight traffic an undue burden.

It is becoming increasingly clear that passenger traffic does not bear its proper share of the joint costs incurred by the carriers for the transportation of freight and passengers. But it is even more clear that as a practical matter passenger fares can not be speedily readjusted upon a higher basis. Although the record in this case clearly shows that the carriers generally do not find passenger traffic highly remunerative, the suggestion that they should add to their revenues by advancing their passenger rates is of little force in view of the fact that they are powerless to adopt it. In recent years State Commissions and State Legislatures have established maximum intrastate passenger rates. So long as the rates thus established are not so low as to be deemed confiscatory in violation of the fourteenth amendment to the federal constitution the carriers are bound to observe them.

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*Note.—It ought to be said, however, that what is above stated as to the burden of proof and the authority of the Commission to pass upon rates as a whole does not imply that these views are opposed to those of the majority.

The activity of the States in this respect has been so general that the carriers no longer can fairly be expected to look upon their intrastate passenger traffic as a possible field for the substantial augmentation of their revenue.

CONCLUSION.

The ratio of return upon the property investment has been indicated. The contention of the carriers is that upon investments in property amounting to approximately $640,000,000 since 1910, no commensurate return has been made, and that the net operating revenue between 1910 and 1913 shows an actual decline. It is no sufficient rebuttal of these contentions, if the supporting figures are true, to point out that the "revenues received by the carriers have been earned by the whole investment, and it is not correct to say that a part of the investment made since a given date has earned no return." The point of the contention is that additional investment can not be expected on the showing made on the last increments of investment. It may be true that physically the $640,000,000 invested since 1910 has been annexed to or blended with the property previously existing. It is admittedly true that the net return has come from working the entire property, old and new. But it is equally certain that if the marginal investment affords no addition to net revenue, the incentive to add further investments is lacking. From this standpoint, the financial standpoint, the case is exactly as though the original property had alone yielded the entire net revenue, and the addition had failed to make any return whatever. Expected earnings constitute in the last analysis the bid which the carriers must make for new capital for needed improvements, extensions, new rolling stock, and similar purposes. It is not necessary to say that on such a showing the investing public will hardly be eager to intrust its funds to transportation enterprises. Where well-secured, long-time bonds bearing 4½ per cent interest command little over par, and where stock can be sold at par only on the prospect of a much higher rate of return, it is clear that the carriers must make a better showing of net revenue before they can as a whole enlist large additional supplies of capital.

Report on Express Companies.

THE Interstate Commerce Commission has issued its statistical report on the express companies of the United States for the year ending June 30, 1911. This constitutes the third report of this series and covers thirteen important companies. A comparative statement of mileage covered in the operation of express companies as of June 30, 1911 and 1910, is presented and shows an increased mileage of 12,262 miles for 1911 as against 1910, the mileage on steam roads increasing 5,556 miles, on electric lines 683 miles and on steamboat lines 6.132 miles. On stage lines there was a decrease of 110 miles.

The Commission's report also shows an increase in the total cost of real property for 1911 of $1,828.199, or 7.22 per cent as compared with 1910. The total value of real property of all express companies for 1911 is recorded as $27.153.868. The increase in cost of real estate and buildings and fixtures used in operation for all companies, was for 1911 over 1910, $1.217,036, while the increase for equipment by a like comparison was $611,163.

Interstate Commerce Commission's Latest Accident Bulletin.

THE Commission has issued its Accident Bulletin No. 50, which contains a record of all accidents occurring to persons, equipment or roadbed arising from the operation of railways used in interstate commerce during October, November and December, 1913. The number of persons killed in train accidents during these months were 191 and the number of persons injured 3,726. The total number of casualties of all classes reported, amounted to 2,792 for persons killed and 50,776 for persons injured. Trespassing still continues to claim a heavy toll as out of the total number killed from all causes, considerably over half was the direct result of this illegal practice. It would appear about time, in view of the Commission's strenuous activities to protect the life and limb of travelers and railway employes, and in view of the regulations which they have enforced for this purpose costing the carriers millions of dollars, that they should make a greater effort to develop some effective means by which the trespassing evil, which is the direct cause of the majority of fatalities, can be more effectively controlled.

STATE COMMISSIONS.

The Development of Commission Regulation.—L. R. Nash has recently written an interesting article for the "Public Service Journal" in which he traces the development of Commission regulation in the United States.

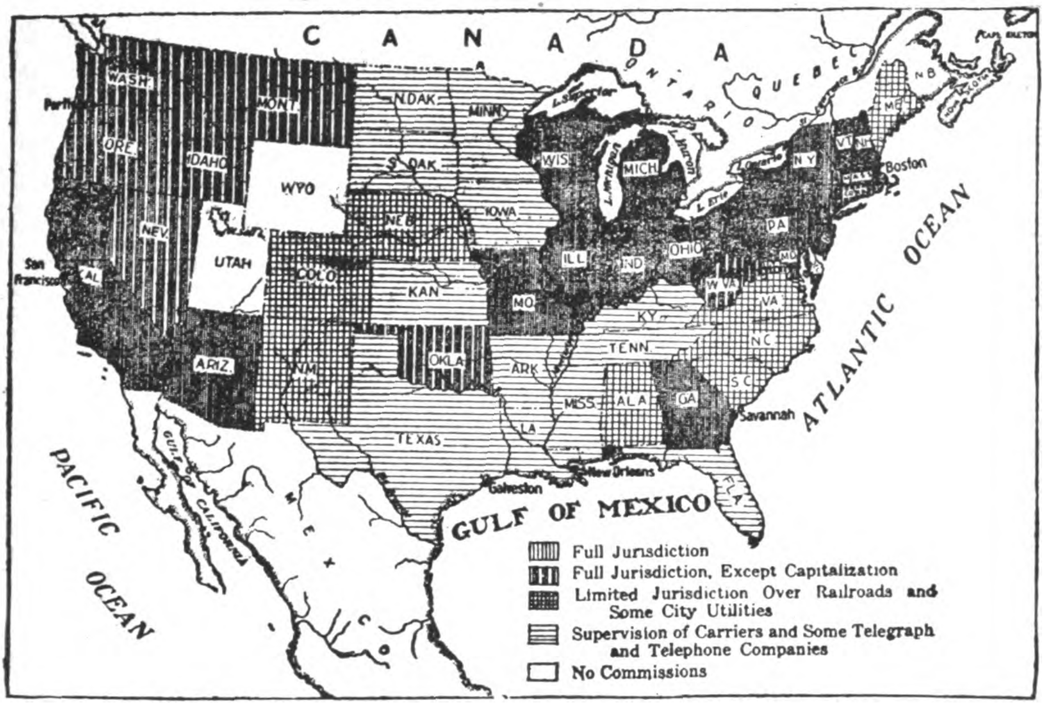
The first efforts in this direction began as early as 1844, in the organization of Commissions for two New England States. In the 50's four other Commissions were established in the Eastern States. After the Civil War the idea spread more rapidly and by 1885 there were twenty-seven Commissions supervising the railroads in about three-fourths of the then existing States. These old Commissions, however, bore little resemblance to the present Public Service bodies, their power being very limited and largely confined to the collection of statistics of operation, information regarding the condition of the roads and their manner of operation, with special regard to the safety and accommodation of the public.

Since then, the jurisdiction of these Commissions has been gradually increased to include allied transportation business and later telegraph and telephone companies, while still later, interurban electric railways, and, in a few instances, street railways came within their scope.

Because of this gradual change, which is still going on, Mr. Nash found it difficult to definitely classify the State Commissions as a whole, with respect to either the breadth or thoroughness of their jurisdiction. There are no two States utility laws exactly alike, and only a few approach similarity in form. It is also found that fairly broad powers conferred by some laws are not in fact fully exercised from lack of appropriations or for other reasons. An attempt was made, however, to arrange the States in four groups as follows:

(1) Those in which Commissions have, and

The Spread of Public Utilities Regulation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ARIZ.
N.M.
OKLA.
ARK.
MISS.
ALA.
GA.
Savannah
LA.
TEXAS
New Orleans
Galveston
FLA.
GULF OF MEXICO
ATLANTIC OCEAN
PACIFIC OCEAN
GULF OF CALIFORNIA
MEXICO
Full Jurisdiction
Full Jurisdiction, Except Capitalization
Limited Jurisdiction Over Railroads and Some City Utilities
Supervision of Carriers and Some Telegraph and Telephone Companies
No Commissions

exercise full jurisdiction over all forms of utilities; (2) those in which jurisdiction is exercised primarily over transportation companies; (3) those in which railroads only are supervised; and (4) States having no Commissions.

The first group includes twenty-five States and the District of Columbia. Two other States will probably be added to this group in the near future, Maine and Colorado having passed laws in 1913 which are awaiting referendum before becoming effective. All these Commissions have regulatory powers over all the common utilities with the exception of Nevada, where street railways are not included. In a few States a "home rule" provision exists in the laws under which municipalities may elect to retain control over utilities within their borders.

Municipal plants are exempt from the jurisdiction of the State Commissions in Illinois, Oklahoma, Washington and Connecticut. In some other States, where there is no specific exemption, the extent of control is subject to interpretation of ambiguous provisions in the laws.

Most of these Commissions are authorized to undertake valuations of utility properties in rate cases or for other purposes.

Indeterminate permits are granted in place of limited term franchises in Massachusetts, Wisconsin, and Indiana, in connection with rights of the municipalities to purchase. This latter right is also embodied in other State laws.

Some States have not conferred upon their Commissions the power to prevent competition between private plants. Among these are Georgia, Indiana, Oklahoma, Oregon and Vermont.

The authority of the Commissions with respect to security issues is also variable. A considerable number have full jurisdiction over all issues. The control of others is limited to corporations organized within the State or in other ways.

The accompanying chart shows the extent and kind of regulation to which utilities are subjected at the present time.

Illinois.—The Public Service Commission has entered an order holding that public warehouses of classes A, B and C, which store grain or other property for a compensation, are public utilities and as such are under the jurisdiction of the Commission. It further holds that such warehouses shall file with the Commission and keep open to public inspection schedules showing rates of charges, together with all rules, regulations, etc., that in any manner affect the rates charged or to be charged.

The order further provides that any warehouseman who was not engaged in the business of conducting a public warehouse of class A, B or C at the time the law took effect, shall make application to the Commission for a certificate of public convenience and necessity before he shall engage in such business and that warehousemen shall not make any discrimination between persons desiring to avail themselves of warehouse facilities.

Missouri.— The Public Service Commission has issued an order reducing express rates in Missouri approximately 21 per cent. The express companies are ordered to make the new rates effective on three days' notice, but not later than August 1st.

A table prepared by the Commission shows among comparative figures the following reductions:

St. Louis to Kansas City, 1-pound packages from 25 to 22 cents; 5-pounds from 45 to 27 cents; 10 pounds, from 55 to 33 cents; 25 pounds, 75 to 54 cents; 50 pounds, from $1 to 87 cents, but on 100 pounds the rate is raised from $1.50 to $1.55.

Missouri railroads will make application to the Public Service Commission of the State, probably within ninety days, for a general increase of both freight and passenger rates within the State. The Commission will take no action until the physical valuation of the railroads is completed which will be several months hence.

The Public Service Commission has issued an opinion in which it is held that railroads have no lawful right to impose a team track storage charge upon shippers in addition to the demurrage charges fixed by statute. The ruling is of general interest and affects every railroad and shipper in Missouri.

Nebraska.—A reduction of nineteen per cent in intrastate freight rates has been ordered by the State Railway Commission on more than one-third of the freight business done in Nebraska. The reduction will total about $750,000.

The new schedule is a distance tariff placing the jobbing towns of the State upon an equalized basis. About 10,000 items are affected including all merchandise, groceries, agricultural implements and many manufactured products. The new rate is effective September 6th. The railroads will probably fight the reduction.

New York.—The Up-State Public Service Commission has made an order directing the New York Central to amend its tariffs so that the rate shall be the same on grain in carload lots to Niagara Falls from Hamlin on the Ontario Division as from Francher on the Falls branch.

This effects a reduction from 4½c. per hundred pounds on the rates from Hamlin and Kendall.

New York.— The Up-State Public Service Commission has been served with an interlocutory injunction order issued by Judge Ray, of the United States District Court restraining the Commission from enforcing its order compelling the Delaware, Lackawanna and Western Railroad to restore two trains between Syracuse and Oswego.

The order is a temporary one and obtains only until the trial and decision of the case finally in the United States Court. Judge Ray, in his opinion, does not question the jurisdiction of the Public Service Commission to regulate intrastate service on an interstate carrier but holds that an interstate carrier so regulated may appeal to the Federal courts rather than to the courts of the State. The present order is concerned actually only with the merits of the case so to speak—the restoration of the two trains. Judge Ray holds the present service to be sufficient.

The decision follows a number of hearings both before the Public Service Commission and two arguments of the case before Judge Ray. The time for final disposition of the case has not been set.

Pennsylvania.—The Public Service Commission has issued the following conference ruling with reference to the requirements covering published rates and fares:

The Public Service Company Law, Approved July 26th, 1913, Article 2, Section 1, (f) provides in part as follows:

"To make no change in any tariff or schedule, which shall have been filed or published or posted by any public service company in compliance with the preceding sections, except after thirty days' notice to the Commission and to the public, posted and published in the manner, form and places required with respect to the original tariffs or schedules, which shall plainly state the exact changes proposed to be made in the tariffs or schedules then in force, and whether an increase or decrease, and the time when the proposed changes will go into effect;" * * *

The term "then in force" as employed in the paragraph above quoted must be interpreted as requiring that a tariff or schedule filed and posted must be allowed to become effective and remain in effect for at least thirty days before any change may be made therein, but this will not affect tariffs or schedules containing rates for excursions limited to certain designated periods under authority of General Order No. 4, of 21st day of January, 1914.

In an administrative ruling covering transportation of railroad contractors, their men, materials and equipment, the Commission has concluded not to construe the law as preventing a common carrier from according free or reduced rate transportation to a contractor, his men, materials, tools, equipments and supplies necessary to be transported by such contractor in the performance of the work being done for the carrier by the contractor, inasmuch as the contractor, under such circumstances, is to all practical intents and purposes, an employe of the carrier, engaged in work for the carrier, and the transportation is, in substance and effect, transportation rendered by the carrier to itself.

Pennsylvania.—The Public Service Commission has ruled that railroads can not give lower rates to coal companies or producers shipping in their own cars than to producers who use the cars of the railroad. The decision was given in a Western Pennsylvania case.

The Public Service Commission has granted permission to trunk line carriers to postpone until October 29th the tariffs previously issued by them providing for changes for "spotting" service performed by such carriers. The tariffs were originally issued to become effective May 27th, but by permission of the Commission were postponed until July 1st, and are by this later action again postponed until October 29th, to which date such issues were postponed by the Interstate Commerce Commission.

LEGISLATION.

Class Legislation.—Nothing has aroused the business men of the country more recently than the efforts to exclude labor and the farmers from the provisions of the anti-trust bills now before Congress. The President and the members of both Houses of the National Legislature have been petitioned again and again against the passage of such legislation, but the opposition, up to the present time, has had little apparent effect as the numerical importance of labor appears to have had a hypnotizing effect upon our national law makers.

How deeply the business men of the country feel the injustice of such class legislation is shown by the following resolution recently passed by the Board of Directors of the United States Chamber of Commerce and sent to each member of the Chamber as well as to the President of the United States and to the members of Congress:

Whereas in response to Referendum No. 3 this Chamber by a vote of 669 to 9 declared itself opposed to legislation which places the laborer and the farmer under a different rule of law from the merchant, manufacturer and miner, and

Whereas the Sundry Civil Bill now before the House contains the identical clause which in the same bill of last session was the occasion of Referendum, No. 3, and

Whereas the Clayton Bill to regulate Trusts and Monopolies, which has now passed the House and is before the Senate, contains clauses discriminating in favor of associations and organizations of laborers, agriculturists, horticulturists and consumers and the members thereof, and

Whereas these clauses in the said Clayton Bill constitute the second step in the progress of legislation which is arraying the employer against the employe, the farmer against the merchant, the horticulturist against the manufacturer, the consumer against the producer, and is not only wrong in principle but so harmful and far reaching in its effects as in our judgment to gravely endanger the stability of a government founded upon equal rights to all men, and

Whereas it is the duty of this Board under its Constitution and By-Laws to do all in its power to make the voice of the Chamber, as expressed in response to its referenda, heard and heeded,

Now Be It Resolved—

1. That a memorial and protest be presented to the President of the United States.
2. That a memorial and protest be presented to the Judiciary Committee of the Senate inasmuch as no hearings are being held by that Committee.
3. That the special attention of the constituent members of this Chamber be called to the form as well as to the substance of the first of the clauses in the Clayton Bill above referred to, —a form said to be adopted because of its doubtful meaning:—some contending that it will legalize violations of the Sherman Act when made by certain associations and organizations therein referred to and by the members thereof, while making unlawful the same acts when committed by all other associations and organizations or the members thereof:—others contending that it merely declares such associations and organizations not to be ipso facto conspiracies in restraint of trade, but does not legalize any act which they or their members may commit in violation of the Sherman Act or of any other law. If this clause is to be accepted as excusing the misconduct of the organizations named, it constitutes a partial repeal of the wise and comprehensive inhibitions of the anti-trust laws. If it is to be construed as merely legalizing the existence of these organizations it is useless because the anti-trust laws do not challenge them. In either event, this clause is unwise, first, because it represents a distinct and affirmative recognition of one class of organizations when similar recognition for other organizations is denied, and this discrimination must prove as unfortunate for the first class as it is unfair to the other; and second, because the adoption of the clause would throw upon the courts the burden of interpreting the intention of Congress when Congress has obviously no definite intention, and thus tends to discredit and cast odium upon the Courts. Moreover, the clause unquestionably furnishes embarrassment to the Executive Department in the impartial enforcement of the law.

The Anti-Trust Program.—The Senate of the United States is now engaged in daily consideration of the three measures said to constitute the administration's "anti-trust" program. One of these relates particularly to the issue of railroad securities, while the other two are designed to supplement the Sherman anti-trust law. All three have passed the House, and, with some alterations, are expected to pass the Senate before the present session closes. The discussion, however, discloses wide differences of opinion over questions of policy and of law, even among senators who are in substantial agreement as to what they seek to accomplish. There is a balancing of possible evils against hoped-for benefits that indicates great uncertainty and confusion, and, notwithstanding the heat of Washington and the weariness of members, the situation is such as to promise an animated and protracted debate. It is evident that not in many years has the Senate faced a task about which the members felt so many misgivings as they do concerning the one now before them. The revision of the tariff and the reorganization of the banking and currency system were simple matters compared with an attempt to provide for official supervision over the conduct of business in the United States, not only compelling all rivals to compete but restricting their competition to approved methods.

The deplorable condition of several great railroad companies at the present time, and the publicity given their affairs during the last two years, is undoubtedly responsible for the strength of the proposal to have all railroad borrowings and stock issues approved by the Interstate Commerce Commission, but the bill is supported by many who hold that unless there is federal supervision there will be State supervision, and that the former is preferable. The most common objection is that the Interstate Commerce Commission is being overworked, that it is physically impossible for the members personally to attend to the many responsibilities being placed upon them, and that in delegating such duties to employes the Commission will suffer the same deterioration in efficiency that has characterized some of the overgrown corporations; and, finally, that it is impracticable for the Commission to place itself in the position of the owners of all railroads and determine the questions of policy which are sought to be carried out by the issue of stock or securities.

Again, some of the most prominent critics of the railway companies are opposed to having the Interstate Commerce Commission charged with any responsibility as to railway securities or capitalization, holding that such responsibilities may be embarrassing in the future. Answering all these objections the friends of the bill say that as amended it simply names the proper purposes for which stock or securities may be issued, and charges the Commission to grant permits accordingly and to see that the funds are so expended, but that the Commission is not charged with determining questions of policy, and will have no responsibility for policies.

The other two bills deal with questions that are much more complicated. They are conceded to involve a radical departure in legislation, in that they attempt to regulate not only monopoly but competition, and to say how far competition in private business may go. The thought in the minds of the legislators undoubtedly is to protect the comparatively weak competitor from the deliberate and calculated warfare of a stronger rival who is seeking to eliminate him from the field by the various practices called "unfair." In other words, the intent of Congress is to prevent the aggressive, destructive kind of competition that is aimed primarily at a rival and prompted not by the present desire to sell goods but by desire to obtain a future control of the market. But there is great difficulty in distinguishing between a perfectly legitimate motive which may at times prompt a man to sell goods even at a loss and the illegitimate motive which is sought to be restrained. In short the legislators recognize that it is very difficult to convict a man of an illegitimate intent when the acts complained of may be innocently performed. Because it seems to be impracticable to define all of the unfair practices that may be used, or to describe the particular conditions under which a given practice is unfair, it is proposed to delegate these powers to a trade commission; but in attempting to do this other difficulties are confronted. Congress no doubt has the authority in the regulation of interstate commerce to declare certain practices unfair, but there is a question whether it may delegate to some other body the function of declaring what is unfair; and still another question whether it may deprive any accused person of a trial in the regularly constituted courts of justice, and yet another question whether the approval of such a body would afford any protection from prosecution in the regular courts. In short the question is raised whether there is any place for a body of the broad authority here proposed in our system of government, wherein all authority is distinctly divided by the Constitution into the Legislative, Executive and Judicial departments. It is true that these same questions were debated when the several grants of authority to the Interstate Commerce Commission were made, and the authority of that Commission to fix "reasonable" rates is claimed as analogous to the authority to define "unfair" practices. Although the authority of the Interstate Commerce Commission has limitations and is subject under the terms of the law to review by the courts, it is effectively exercised.

Laying aside all constitutional questions, there is evidently much uncertainty in the Senate as to the wisdom and practicability of vesting so much authority over the common practices of the business community in any Commission. Evidently the idea of a trade commission that will tell every man what he may do, and protect every honest man from the unfair competition of others, is a pleasing one, in these days of stress, to many people, for many letters and resolutions from trade organizations have endorsed it. This is one reason why Congress feels that despite its own doubts it must go ahead. But not a few of the Senators are wondering whether the authors of the resolutions understand in what vague terms the new authority must be established and how important a step it is in the movement toward the governmental, political and popular control of what have been heretofore regarded as private business affairs. "We have believed," said Senator Borah, of Idaho, in his speech in the Senate, "that however severe the competition, things would finally adjust themselves to the public good. * * * This bill marks the beginning of the time when the business of the country will be controlled through bureaus and commissions." The theory of those who have this view is that familiarity with authority begets its further use, and that a commission possessed of unlimited power to regulate and temper competition will constantly extend its interference with private initiative. The result in their opinion will be an unavoidable loss of individual freedom, originality and aggressiveness, a weakening of the springs of progress, and a certain fixity of conditions that will serve to protect even the big concerns whose domination is feared.

These are some of the considerations that cause the Senate to hesitate and debate and hunt for new language and new light before coming to the final test.

LEGAL.

Important Recent Federal and State Legal Decisions Affecting the Carriers.

THE following analysis of the more important Federal and State Court decisions rendered during July and which appertain to the operation, management and regulation of the railroads of the United States, constitutes a continuation of the record began in the July issue of the "Railway World." As is apparent, the necessary reference to Court records and authorities is given in each case, and any further information desired, will be gladly furnished upon request. Suggestions regarding these records will be thankfully received as a consistent effort is being made to make such records of practical value to the legal departments of the various railways.

Cities May Not Become Investors in Railroad Stock.—(Federal Court.) The United States District Court for the Eastern District of North Carolina has held that the North Carolina Code authorizing counties of the State to subscribe for the stock of any railroad company when necessary to aid the completion or construction of any railroad in which the citizens of the county have an interest, does not authorize cities to issue bonds in payment for stock of a railroad corporation. The City of New Bern, N. C., deemed it advisable to furnish financial assistance to the East Carolina Land and Railway Company. The city officials decided to purchase a block of stock from the company and to pay for the same by ordering a bond issue. The stock was purchased and the bonds issued. The plaintiff, Charles C. Burlingham, and others, purchased some of the bonds. When the interest upon them became due, the city levied a tax to cover the same. The tax was collected but no interest was paid the bondholders for the reason that it was discovered that the stock purchase and bond issue were illegal for the reason that such acts were beyond the corporate powers of the city. Burlingham brought a bill in equity to compel the tax collectors to turn over the tax money to him and the other bondholders and to declare all money in their hands a trust fund for bondholders. The court, in deciding the case held that the city had no authority to make the purchase of stock or to issue bonds to be used in paying for the same. That since both the stock purchase and the bond issue were illegal, any tax levied to pay the interest on the bonds was also illegal and therefore it could not be said that Burlingham or any of the other bondholders had any interest in the money collected. The court dismissed the plaintiff's bill.—(Burlingham v. City of New Bern, 213 Fed. 1014.)

Abandonment of Franchise.—(Washington.) An electric railway holding a franchise to construct an electric railway or its successors in interest having exercised the privileges conferred thereby cannot, against the will of the State, abandon the enterprise if the abandonment works a prejudice to the public interest.—(Day v. Tacoma Ry. & Power Co., 141 Pac. 347.)

Violation of the Federal Appliance Act.—(Federal.) The Federal Safety Appliance Act, providing that where any railroad car has been properly equipped and the equipment shall become defective while the car is being used by the carrier on its line of railroad, it may be hauled from the place where the defect was first discovered to the nearest available point where it can be repaired, does not allow cars with defective equipment to be moved on side tracks or in switching yards except for the purpose of hauling them to the nearest available point for the purpose of making repairs, and hence the statute was violated by moving a car from one yard to another placing it on a side track, where it was required to be moved frequently and by failing to make repairs until it was moved back to the first yard twelve days after the discovery of the defect in the equipment.—(United States v. Chesapeake & O. Ry. Co., 213 Fed. 748.)

Duty to Fence.—(New York.) The duty of a railroad company to fence its right of way, prescribed by Railroad Law (Concol. Laws 1910, c. 49) is an absolute duty; and hence a covenant between a railroad company and the adjoining owner, relieving the railroad company from fencing its right of way, while a defense as to an action by the adjoining owner for injuries to his stock is not a defense to an action by a third person, not a party to the agreement, whose stock strayed onto the right of way through the land of the adjoining owner.—(Shepard v. Pennsylvania R. Co., 148 N. Y. S. 388.)

The Degree of Care to be Exercised.—(Indiana.) A railroad company operating trains over public streets must use ordinary care to so operate its trains as not to injure others lawfully using the streets, but the company is not an insurer of the safety of persons lawfully on the streets, and the care which the company must use is the care which a person of ordinary prudence would use under similar circumstances.—(Evansville & T. H. R. Co. v. Hoffman, 105 N. E. 788.)

Excessive Damages.—(Maine.) Under Maine Rev. St. c. 89, prescribing the measure of damages in actions for wrongful death as a fair and just compensation to the person for whose benefit the action is brought, the measure of damages in an action for the death of an eight year old child brought for the benefit of its parents must be based entirely upon the prospective pecuniary benefit to the parents, and a verdict of $1,811 is excessive.—(Curran v. Lewiston A. & W. Ry. Co., 90 A. 973.)

Safety Appliances.—(Wisconsin.) In an action against a railroad company for burning plaintiff's property, the burden was on it to show that it had provided a spark arrestor so constructed as to give the most practical protection against the escape of sparks, cinders, etc., from the smokestack of its engine as required by St. 1913, section 1494.—(Bonnell v. Chicago, St. P., M. & O. Ry. Co., 147 N. W. 1047.)

Interstate Rates.—(Kansas.) Two carriers filed and published tariffs under the Interstate Commerce Law making two rates on household goods, one of which was based on a declared valuation and limitation of liability in case of loss, and the other showed a higher rate where no valuation was declared or limitation prescribed. A shipper of household goods testified that upon inquiry the agent of one of the carriers quoted a rate to him without explaining that two rates were in existence, also that when the contract of shipment was signed, and the freight paid the agent indorsed on it the valuation of the property and the limited liability in case of loss, and that he objected to the limitation, but did not offer to pay the higher rate, nor ask to have the goods withheld from transportation. Held, that the filing and publication of the rates afforded the shipper notice of the existence of the two rates, and he is presumed to have known of the limitation in value and of liability in the rate under which the shipment was made and the freight paid, and this rate determines the liability of the carrier in an action brought for the loss of the goods.—(Christl vs. Missouri Pac. Ry. Co., 141 Pac. 587.)

Suit by Executor or Administrator.— (New York.) The New York Civil Code authorizes the executor or administrator of a decedent who has left surviving a husband, wife, etc., to maintain an action for a wrongful act causing death against any railroad corporation responsible for such death. Under this section of the law the Court of Appeals has held that no action can be maintained by the executor or administrator, where the decedent at the time of his death, could not himself have maintained the action, the statute of limitations having barred his commencing the suit.—(Kelliher v. New York Cent. & H. R. R. Co., 105 N. E. 824.)

Injury to Animals on Track.—(Kansas.) It is the duty of a railway company to exercise reasonable or ordinary care to keep its cattle guards from becoming so filled with snow and ice as to make it possible for animals to cross them, and for negligent failure in this respect the company is liable for injuries to animals thus getting upon its right of way.—(Martin v. Atchison, T. & S. F. Ry. Co., 141 Pac. 599.)

Trespassing Animals.—(N. D.) A railroad company owes no duty to the owners of animals, which are allowed to trespass upon its right of way, to keep a lookout therefor or to take steps to prevent striking them, until it has discovered them, nor is it bound to presume that they may be there. Even after such discovery, the duty of the engineer to safeguard the lives of himself and the crew and passengers of his train is higher than his duty to protect the trespassing animals. If, therefore, it would appear to a reasonably prudent engineer, under all of the circumstances of the case, that a collision would be unavoidable, and that it would be safer to continue operating the train at the same rate of speed than to attempt to stop or to slow down the train such action and failure to stop or slow down the train would not constitute a ground of recovery for the owner of the injured stock.—(Corbett vs. Great Northern Ry. Co., 148 N. W. 5.)

Railroad Cannot Occupy Land Until Actually Needed.—(North Carolina.) Where a railroad company condemned a right of way over land upon part of which were located tenement houses belonging to defendant, such houses did not become the property of the railroad company, and the defendant has the right to rent them as before until the land shall be actually needed for railroad purposes.—(Raleigh, C. & S. R. Co. v. Mecklenberg Co., 82 S. E. 5.)

Express Company Acting as Forwarding Agent.—(Federal Court.) An express company to which an automobile was delivered to be packed and forwarded to a seaport by rail and there delivered to a steamship for transportation, which did so deliver it, and received the steamship company's usual bill of lading to its order, was not an insurer nor a carrier, but a mere forwarding agent, and was not liable for the negligence of the steamship company or of stevedores employed by it to unload the steamship.—(Reid v. Fargo, 213 Fed. 772.)

Railway Tie Patents Held Invalid.—(Federal Court.) The United States Circuit Court of Appeals, Sixth Circuit, has held the Wolhauper patents for railway tie plates as void for lack of invention, in view of the prior art.—(Railroad Supply Co. v. Elyria Iron & Steel Co., 213 Fed. 789.)

Not Bound to Warn Travelers.—(N. H.) A railroad company is not bound, by lights or other signals, to warn travelers that a freight train is crossing a highway at night, unless, to discharge its common-law obligation of ordinary care, it is bound to give some warning of such fact. Where the plaintiff, driving an automobile on an extremely dark night, ran into the side of a freight train, no recovery can be had unless it can be proved that the sole cause of the accident was the failure of the railroad company to provide some signal.—(Gage v. Boston & Maine R. Co., 90 A. 855.)

Liquor Not Considered Legitimate Subject of Trade.—(Mississippi.) The commerce clause of the Federal Constitution excludes State control only over interstate commerce in articles which are legitimate subjects of trade, and not over articles which are inherently unworthy of commerce and unfit for the use of the people, intoxicating liquors for instance, and which the State, in the absence of Congressional legislation covering the subject, has declared are not legitimate subjects of trade.—(American Express Co. v. Beer, 65 So. 575.)

Crossings Must Not Be Blocked.—(Kentucky.) Where a railroad crosses a public highway the railroad company and the public must each exercise the right to use the crossing so as to subject the other to as little inconvenience as is practicable under the circumstances. Under Kentucky Statutes, if a train has blocked a crossing for five minutes and is not ready to move, the crossing must be cleared by cutting the train in two.—(Harvey v. Illinois Central R. Co., 167 S. W. 875.)

Complying With Speed Ordinance a Public Duty.—(Iowa.) Where an ordinance limited the speed of trains within the city to six miles per hour, compliance with such regulation is a public duty, a violation of which is actionable negligence, authorizing a recovery by a person injured as a proximate result thereof.—(Wolfe v. Chicago Great Western Ry. Co., 147 N. W. 901.)

Duty of Trainmen to Remove Trespassers.—(Pennsylvania.) Where the conductor or other railroad employe in charge of starting a train sees a child sitting on the steps, failure to remove him before starting the train is negligence rendering the carrier liable for the resulting injuries.—(Trevethan v. Philadelphia & R. Co., 90 A. 796.)

Coal Roads Indicted Under Anti-Trust Law.—Indictments have been filed in the United States District Court at Rochester, New York, against the Pennsylvania Railroad, the Northern Central Railway, the Delaware, Lackawanna & Western Railroad Co., and the Delaware, Lackawanna & Western Coal Co.

All the indictments relate to transactions in connection with the mining of anthracite coal in the Pennsylvania fields and transportation to Buffalo and vicinity, and allege unfair advantages by the railroads over other shippers.

New York Central Officials Indicted for Rebating.—Indictments were returned in the Federal Court in Chicago on August 4th, charging that the New York Central Railroad and its subsidiaries have given rebates to the O'Gara Coal Company by various subterfuges; that the railroads had granted extension of credit to the coal company, thus violating the Elkins law, and that advances and loans amounting to $500,000 had been given the coal company.

W. C. Brown, former president of the New York Central; John Carstenen and Richard M. Huddlestone, respectively first vice-president and auditor of the New York Central; Thomas J. O'Gara and William A. Brewerton, president and secretary of the coal company, and three roads—the Lake Shore and Michigan Southern, the Cleveland, Cincinnati, Chicago & St. Louis, and the Chicago, Indiana & Southern—are named in the indictments.

Suit for Heavy Damage Claims Filed Against New Haven.—Whipple, Sears & Ogden, representing minority holders of the New Haven System, have filed a suit in the Supreme Court at Boston, asking for the appointment of a receiver, special master or other official to prosecute claims aggregating $306,000,000 against defendant directors and directors' estate of the New York, New Haven & Hartford Railroad.

The suit, in which the attorneys recently demanded that the directors join, is designed to force restitution from those responsible, of funds alleged to have been illegally expended in building up the New Haven System.

The litigation is in the form of an equity action entered by the attorneys as trustees under the will of Olea Bull Vaughan. They own fifty shares of New Haven stock and bring the action "in behalf of themselves and all other stockholders of said corporation who may become parties."

The bill of complaint declares that the defendants, on account of breach of directors' duty chiefly through causing the New Haven to acquire illegally Boston and Maine, trolley and steamship properties, are bound to pay to the New Haven $162,000,000 "withdrawn therefrom wrongfully and for ultra vires and illegal purposes." It is alleged that the losses resulting from these acquisitions approximate $102,000,000 and that under the Federal anti-trust act the New Haven is entitled to recover from the defendants three-fold that sum or $306,000,000.

That the New Haven had no charter authority to acquire the properties in question; that their acquisition was prohibited by specific statutory enactment in Massachusetts at least and also by the Sherman anti-trust act; and that the New Haven did not acquire legal titles for any purpose except to compel return to it of its funds illegally expended in connection therewith.

Union Pacific Wins Stock Case.—The Court of Appeals at Albany has sustained a demurrer of the Union Pacific Railroad to the complaint of the Equitable Life Assurance Co., which sought to restrain the railroad from distributing certain moneys among the common stockholders, and thereby makes it possible for the common stockholders of the Union Pacific Company to receive approximately $82,000,000 in Baltimore and Ohio stock. The action of the Equitable was based upon the assumption that the preferred stockholders had a right to participate in accretions of $58,064,157 resulting from Southern Pacific transactions and a $15,868,200 decrease in liabilities resulting from the exchange of convertible bonds.

The proceeds of these transactions the Union Pacific Company regarded as profits and held that under provisions of the articles of association the rights of the preferred stockholders to share in them were limited. The Equitable company holds $1,618,000 of Union Pacific preferred stock.

The total amount of stock outstanding in the Union Pacific Railroad at the time the action was brought by the Equitable Company was $216,662,400 common and $99,543,500 preferred.

The question submitted to the Court of Appeals by the plaintiff was whether the accretions from the Southern Pacific transactions and the proceeds of the exchange of convertible bonds were profits.

The appeal to the highest court was by permission from an order of the first appellate division, which sustained an order from the special term entered in New York County sustaining the Union Pacific's demurrer to the complaint of the Equitable Life Assurance Company.

TRAFFIC.

Transportation of Exhibits to the Panama-Pacific International Exposition.—The Panama-Pacific International Exposition, through its Traffic Department has issued Rules and Regulations covering the transportation of exhibits to the Exposition which will be held in San Francisco from February 20th to December 4th, 1915. The information is contained in two pamphlets, one to cover domestic shipments and the other foreign shipments. These pamphlets also contain information as to steamship reductions in freight rates for sea carriage of exhibits as well as the special provisions and reductions made by the rail carriers, which generally speaking, is on the basis of full freight rate to the Exposition and free return to the original point of shipment if exhibits have not changed ownership.

Exhibits and merchandise should be securely packed to insure safe handling and transportation. Where boxes and crates are used in packing, it is suggested that screws be used instead of nails, as it will then be easier to re-assemble at the close of the Exposition in December of next year.

Exhibits and merchandise intended for different buildings should be packed in separate packages and each package must contain an accurate and detailed list of the contents and should have affixed to it a special tag which will be supplied by the Exposition.

Arrangements have been made for the consolidation of less than carloads shipment at New York, Chicago and other points into carload lots. By means of this arrangement exhibitors may ship their goods to the nearest consolidated point and obtain the benefit of the carload rate, plus a charge for the consolidation service from that point to San Francisco.

All charges including terminal charges at San Francisco are to be prepaid and shippers are cautioned that the exact amount of prepay is entered and receipted for on the Bill of Lading. Simply writing the word "Prepaid" on the Bill of Lading is not sufficient.

Full information and requirements relating to Bills of Lading on all shipments and invoices on foreign shipments are shown which should prevent errors, delays and confusion.

The foreign pamphlet contains United States Customs Regulations under the "Act providing for the free importation of articles intended for foreign buildings and exhibits at the Panama-Pacific International Exposition and for the protection of foreign exhibitors" and calls attention to Quarantine Regulations for live animals, plants, shrubs, agricultural products, etc.

Automobiles, motorcycles, bicycles, aeroplanes, airships, balloons, motor-boats, racing shells, teams and saddle horses, may be brought to the United States by non-residents for touring purposes or for the purpose of taking part in races or other specific contests under bond to export the same within six months, provided that no article shall be allowed such entry if intended for sale or which is imported for sale on approval.

The Vessel Tonnage of the World.— The world's carrying power now includes approximately 31,000 vessels with an aggregate capacity of 47 million gross tons and has nearly doubled in capacity during the last twenty years. In number, however, this commerce fleet has decreased slightly, thus showing a tendency toward larger carrying units. These figures are based upon the tonnage of all vessels of over 100 tons engaged in trade, whether domestic or foreign, or ocean, river and lake.

This country ranks second in number and tonnage of vessels engaged in commerce, but this is due to the vast number engaged in lake and ocean coastwise trade, since the number of American vessels engaged in foreign trade, according to reports received by the Bureau of Foreign and Domestic Commerce, Department of Commerce, is less than that of Great Britain, Germany, France, Italy or Norway. According to a recent statement of Lloyd's, out of an aggregate tonnage of 47 million gross tons in 1913-1914, forty per cent were credited to Great Britain, eleven per cent to the United States, eleven per cent to Germany, about five per cent each to Norway and France, three per cent each to Holland, Italy and Japan, and from 2¾ to 1¾ per cent to Russia, Sweden, Austria-Hungary, Denmark and Spain.

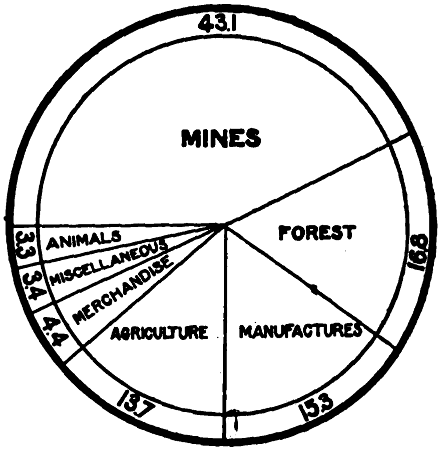
Effect of War upon Import and Export Traffic.—The European War has practically suspended, for the time being, the movement of import and export merchandise; and various railways, having their termini on the coasts have found it necessary to issue statements for the purpose of informing shippers regarding the true status of affairs. The following notice issued generally to shippers by the Boston and Maine Railroad is an example of the attitude which the carriers have been forced to assume under existing conditions:

"On account of European War conditions and the consequent disarrangement of Trans-Atlantic service, all ocean rates quoted are withdrawn, and through bills of lading will not be issued until further notice.

"The legal responsibility of the inland carrier ceases when freight for export is placed on the wharf of the ocean carrier, and the Steamship Lines deny responsibility for protection of the property until they take possession. Owners of export freight held at ocean terminals of the Boston and Maine Railroad can arrange to protect by insurance for the period intervening before removal by Steamship Companies.

"While there is no obligation on the part of the inland carrier, this notice is given from courtesy, as a reminder to the owner of the freight, to exercise his own wishes as to protecting the interest he may have in it."

The Grand Divisions of Traffic.—The following graphic shows, in an interesting manner, the various sources from which the freight traffic of the country is procured. The fact that nearly half the tonnage comes from the mines would perhaps prove a surprise to the layman who, in many instances, has been led to believe that agricultural products constitute the most important factor in freight movements. As a matter of fact, agricultural productions come fourth, the products of the mines, the forests and the factories, all moving in greater volume than do the products of agriculture.



Railroad Rates to the Panama-Pacific International Exposition.—It is the official declaration of the traffic managers of great railway lines confirmed by the Traffic Department of the Exposition itself, that no such early announcement of round-trip rates to a World's Fair has ever been made as has just been determined upon in the case of the Panama-Pacific International Exposition at San Francisco in 1915. Neither has there ever been such a comprehensive agreement by competing routes, nor any hitherto equaled reduction of the rates.

The Transcontinental Passenger Association, comprising the passenger traffic managers of the lines of Chicago, during their convention in San Francisco, decided upon extraordinarily favorable rates, for an unprecedented period in connection with this exposition. At previous World's Fairs in this country a few months' advance notice at most was all that was made by the railroads of their special round-trip rates, stop-over privileges, etc. At the St. Louis Exposition for example, in 1904, it was not until the close of January of that year that the special schedule of railway rates to and from St. Louis was announced. This was barely three months before the opening of the Fair and in meagre contrast to the months ample notice now extended by the roads to public knowledge. The advantage of knowing thus early what the rates to San Francisco and return from all points in the West are to be, is of every advantage alike to prospective visitors and to the Exposition. All who are contemplating a visit to what unquestionably is to be the noblest and most beautiful exposition the world has ever beheld, have now full time in advance to know the cost of the trip, its various routes of approach, stopover and other exceptional privileges, etc. When to this is added the vital fact that the excursion rates have been fixed at figures materially lower than in connection with any previous exposition. the determination to attend, and relative ease of arranging for the trip, will be appreciated.

A comparison of these rates shows them to average rather less than a cent a mile as against, to quote St. Louis again—last of previous great expositions in this country—about a cent and a half a mile, or nearly one-third less than the then special mileage rate and from that city. The time limit for the use of return tickets from St. Louis was only sixty days, whereas ninety days is allowed in the case of the trip to San Francisco next year.

These tickets will be on sale from March 1st to December 1st, 1915 and good going on any direct line and from returning if desired on any other direct line. Tickets from Chicago, St. Louis and similar territory will be good via New Orleans, and all tickets good by way of Los Angeles.

The railroads are taking further active interest in the Fair. The Exploitation and general advertising departments of all the western roads, and in most of the eastern, have already literature in preparation showing, naturally enough, the special attractions of their own respective lines but dwelling with hearty emphasis on the magnificence of the Exposition itself. No little of the photographic output and useful data of the Exposition's Exploitation Department has already been forwarded, at the Companies' request, for this purpose. Each company will also show in its own booklets and other publications the exact rates from all points within its territory. There is to be another convention of the traffic managers a little later on, when there will be additional things done of material interest to the Exposition and the public.

Appended is a list of the rates decided upon at the recent meeting of the Transcontinental Passenger Association:

From Denver and common points to San Francisco and return	$45.00
From Omaha, St. Joseph, Atchison, Kansas City and common points to San Francisco and return	50.00
From St. Louis, Memphis, New Orleans and common points to San Francisco and return	57.50
From Chicago and common points	62.50
The rates from territory east of Chicago will be decided at an early date. The same basis of reduced rates will doubtless be put in effect from all points east, which will make the rates from New York and Boston to San Francisco and return not far from	80.00

Round trip tickets, going or returning via Canadian or northern lines through Victoria, Vancouver, Seattle or Portland; Shasta (rail) route, or steamship between these points, $17.50 higher. The usual stop-over privileges will be allowed on both going and return trips.

Pullman accommodations and meals may add about one-third more to the above rates. The cost as a whole is less than has ever been known for so extended a variety of round trips, with the attendant attraction of scenery, first class equipments, and the King of Expositions as the grand half-way house of the splendid journey.

ORGANIZATION NOTES.

Forthcoming Meeting of the American Association of Railway Superintendents.—The 27th annual meeting of the American Association of Railway Superintendents will be held in New York City, August 20th and 21st, 1914. The Hotel Cumberland at Broadway and 54th Street and Hotel Woodward at Broadway and 55th Street, have been selected as headquarters. The Long Island Railroad has extended the courtesy of a free trip over a portion of its electrified territory, to leave New York 3 P. M. Saturday, August 22nd. The Pullman Company has agreed to grant to members of the Association and department members and their families, who are prohibited by law from receiving free or reduced transportation, the privilege of accommodations in their cars en route to and returning from the Convention, at half rates. It is believed that the forthcoming meeting will prove one of the most interesting in the history of the Association as a railroad president, a vice-president and a superintendent of transportation have already agreed to deliver addresses bearing on the operating conditions of the day. Aside from this, there will be a number of reports by committees to consider and discuss.

Summer Outing of Pittsburgh Traffic Club.—The outing of the Traffic Club of Pittsburgh was held at Idlewild Park, a beautiful mountain resort near Ligonier, Pa., Monday, August 10th. The committee in charge of the affair comprised: R. B. Merrick, chairman; J. G. Hill, secretary; J. F. Lent, A. H. Orr, J. A. Fitzpatrick, E. R. Worcester, C. E. Barnhart, A. Waldbauer, T. W. Bennett, D. C. McCready, T. B. Moss, F. A. Higerd, Chas. McNichol, J. C. Kimes, C. H. Jackson. For the first time in the history of the Club, members were permitted to invite wives and sweethearts. This innovation was a huge success. A serious pause prior to the noonday lunch occurred when President E. F. Lalk requested two solemn reverent minutes with heads bowed in silent prayer out of respect to the funeral of Mrs. Woodrow Wilson, President Wilson being an honorary member of the Club. Repeating the custom of last year the Traffic Club of Cleveland was entertained and a baseball game between teams representing both clubs resulted in the defeat of the Pittsburgh Club to the tune of 11 to 5. W. K. Steele, of the Pennsylvania Railroad, listened to the squawking of the vanquished who seriously questioned his balance of mind but never his integrity. Various contests were held, prizes being awarded to the winners in every event. Dancing and cards for the ladies and moving pictures of all events were taken. J. W. Patton, of Columbus, scored high in the Clay Pigeon Shoot. A dinner of chicken, waffles and corn concluded a pleasant day for all.

Telegraphic Reports on Accidents.—The Special Committee on Relation of Railway Operation to Legislation, has issued its Bulletin No. 63, in which attention is called to the necessity and proper method of making telegraphic reports of accidents to the Interstate Commerce Commission.

The Bulletin, with the exception of the cipher code which is referred to under Secton 5, reads as follows:

To the Railways:

Reports to the Safety Division.

On June 21, 1911, the Interstate Commerce Commission issued its order to each carrier requiring a "report by telegram * * * * of any collision, derailment or other accident upon the railroad operated by such common carrier resulting in the death of one or more persons."

The definition of accidents involving death is as follows:

Accidents to persons resulting in immediate death, or in death within twenty-four hours from the time the accident occurred, should be reported * * * * killed.

The following suggestions are made in connection with the reporting of accidents:

1. Railways to transmit by telegram reports of accidents involving the death of passengers or employes riding upon or employed in, on or about trains, engines or cars.

2. Railways to transmit by mail reports of accidents involving the death of trespassers killed on the right-of-way, persons killed at grade crossings, employes killed by trains while engaged in work on tracks or bridges.

3. Railways not to report either by telegram or mail, but to include in the monthly reports as heretofore, so-called industrial accidents, such as employes killed while working in shops, falling from bridges, or by any accidents not connected with train operation.

4. Reports to be as brief as possible, and not deal with more than the following essential facts:

Time (A. M. or P. M.)
Place (nearest station and state).
Number killed—passengers.
Number killed—employes.
Nature of accident.
Approximate cause.
Signature (name and title).

5. In the interest of brevity, conciseness and uniformity, railways may use the cipher code as provided by Committee.

6. Telegrams to be addressed as follows:

The Interstate Commerce Commission,
Safety Division, Washington, D. C.

Reports to the Locomotive Boiler Inspection Division.

7. All accidents resulting from failure, from any cause, of a locomotive boiler or any of its appurtenances, resulting in serious injury or death to one or more persons, to be reported by wire to the Chief Inspector of Locomotive Boilers at his office at Washington, in accordance with Paragraph 55 of the Rules and Instructions for the inspection and testing of locomotive boilers and their appurtenances, issued by order of the Interstate Commerce Commission, June 2, 1911.

8. A "serious injury" is defined as an injury which requires the person injured to lay off for three days, in the aggregate, within the ten days immediately following the accident. If the injury is so slight that apparently it will not disable the person injured from working for three days, it is not the subject of report.

9. Telegrams may be addressed:

McManamy, Southern Building,
Washington, D. C.

10. It is sufficient to state date of accident, name of railroad, number of locomotive, where same can be inspected, nature of accident, and number of persons killed or seriously injured.

11. It will not be necessary to report by wire or by letter accidents of the kind specified in Paragraph 7 to the Safety Division of the Interstate Commerce Commission.

Monthly Reports.

12. The making of telegraphic or mail reports as suggested above, either to the Safety Division or to the Locomotive Boiler Inspection Division, will not relieve railways from reporting accidents as required by law in their monthly reports to the Accident Division of the Interstate Commerce Commission.

Special Committee on Relations of
Railway Operation to Legislation.

Portland (Ore.) Transportation Club Elects President.—W. Merriman, freight agent of the Southern Pacific Company at Portland, has been elected president of the Portland Transportation Club, having been advanced from the vice-presidency. The club membership numbers 371 and is made up from transportation men of all lines in the city. Mr. Merriman has always been an active member of the club. He began service with the Southern Pacific Company twenty-five years ago as office boy at a small station in Oregon.

CONSTRUCTION.

Railway Construction in Alaska.—Rapid progress is being made on the preliminary railway surveys in Alaska and the engineering Commission expects to have the reports completed and ready for presentation in Washington in December. To Lieut.-Col. Arthur Mears, has been assigned the task of superintendent of construction of the Alaskan Railways. He was one of Col. Goethals' assistants on the Panama Canal, being appointed chief engineer on the Panama Railway.

This railway development in Alaska is being watched with keen interest by the people of British Columbia. It is expected that the construction of the thousand miles of Alaskan Railway by the United States Government at the cost of $35,000,000 will be followed by the extension of the lines through the Yukon into Northern and Central British Columbia connecting with the main line of the Grand Trunk Pacific Railway.

Prince Rupert in particular, will benefit by the opening up of Alaska. That city justly claims to be the real gateway to the North. With its magnificent harbor, its dry dock just approaching completion and its ideal situation—it is the nearest Canadian City to Alaska—it will handle the bulk of the commerce over the newly created routes.

Southern Railway Constructing Many New Stations.—The Southern Railway is engaged at the present time in the construction of new passenger or freight stations at the following points: Passenger station at Reidsville, North Carolina; freight depot at Huntington, Indiana; passenger station at South Boston, Virginia; freight and passenger station at Bath, South Carolina; passenger station at Kershaw, South Carolina; freight and passenger station at Ninety-Six, South Carolina; passenger station at Mt. Airy, North Carolina and freight and passenger station at North Wilkesboro, North Carolina. In addition to these new stations, it has also awarded contracts for the construction of transformer houses at Morristown, Tenn., and Gainesville and Howell, Ga., and a combination depot at East Chattanooga, Tenn.

New Freight Facilities at Mobile.—Southern Railway Company is arranging for a general development of its freight terminal at Mobile, Ala., and authority has been given for the construction of new freight houses, storage yard and engine yard.

The facilities for handling freight will consist of an out-bound freight house, 26x410; and inbound freight house, 40x140, with office 56x134. Cotton platform 40x330; ribbon platform, 12x410, and necessary tracks, team ways, drainage and paving with adequate fire protection.

The work to be done in providing engine handling facilities will consist of grading, track work, cinder conveyor and the provision of drainage and water supply. A new storage yard, with a 50 foot track scale will also be provided.

Important Double Tracking Project for Southern Railway.—It is reported that within five years the management of the Southern Railway expects to have a double track line the entire distance of 649 miles from Washington to Atlanta. The funds for this work will be provided by the sale of $20,000,000 bonds of the Atlanta and Charlotte Air Line Railway, the issue of which has been authorized and approved by the Georgia Railroad Commission.

Of these bonds $5,500,000 have already been sold and the proceeds will be used to refund an equal amount of Atlanta and Charlotte Air Line bonds now owned by Southern Railway. This sum will be used by Southern Railway in double-tracking those portions of its line between Washington and Charlotte which are still single track. When this has been completed, attention will be turned to double-tracking that portion of the line between Charlotte and Atlanta which is still single track. This will involve a great deal of heavy work, especially in the mountains of North Georgia, and will call for expenditure of between $13,000,000 and $14,000,000.

The single track lines north of Charlotte to be double-tracked are as follows: Orange, Va., to Amherst, Va., 73.99 miles; Whittle, Va., to Danville, Va., 22.09 miles; Pelham, N. C., to Greensboro, N. C., 37.14 miles; Concord, N. C., to Harrisburg, N. C., 6.4 miles; a total of 139.62 miles.

Of the line from Charlotte to Atlanta, 267.5 miles, double-track has been constructed between Atlanta and Duluth, 24.52 miles; between Suwanee and Gainesville, 22.9 miles; and between Spartanburg and Spartanburg Junction, 1.88 miles, a total of 49.3 miles, leaving 218.2 miles of single track.

The completion of this great work of double-tracking the main thoroughfare for travel between the East and the South will mean a new era of transportation for the South and is of interest to all parts of the section.

EQUIPMENT.

Applying the Federal Safety Appliance Acts.—The Pennsylvania Railroad has notified other railroads that it will no longer accept from lines with which it connects, any passenger cars which do not meet the requirements of the Federal Safety Appliance Acts.

To meet the Federal requirements for passenger cars, the Pennsylvania Railroad has, since the details of the laws were made known in 1911, been adding to its cars the appliances demanded. All cars have now been equipped at a cost of $144,217.

To equip its locomotives and passenger and freight cars with the safety appliances required under the Federal laws will, when completed—the company has until July 1st, 1916, to equip its freight cars—cost the Pennsylvania Railroad System $5,185,000.

The Development of the Block System on the Pennsylvania.—With the completion on September 1st, of an elaborate plan of improvements in its automatic block signal system, the Pennsylvania Railroad will have more four-track lines operated under automatic signals than any railroad in the world.

At a cost of $6,000,000 the Pennsylvania Railroad has in the past three years equipped 253 miles of its main lines with automatic signals.

On September 1st, the main line of the Pennsylvania Railroad between Pittsburgh and New York, and Philadelphia and Washington, will be equipped with automatic block signals.

The signal system on the Pennsylvania Railroad East of Pittsburgh and Erie represents an estimated investment of approximately $18,000,000. The difficulty in arriving at more than an approximate figure is due to the fact that many changes have been made in the signals from time to time in the past thirty years. The electro-pneumatic interlocking switch and signal system in the New York Station and on the electric line between Sunnyside Yard, L. I., and Manhattan Transfer, N. J., alone cost $1,750,000.

It takes a normal force of 1,800 men to maintain the Pennsylvania's signal system. It costs to keep these signals in order no less than $1,500,000 a year.

NEW ROADS.

Arrangements Completed to Finance New Tennessee Railroads.—Reports from Tennessee state that plans for financing the Nashville, Shiloh and Corinth Railroad have been approved by Nashville organizations and the Davidson County Court, which renders the deal practically complete. Davidson County and Nashville will authorize a bond issue of $1,000,000. The road will run from the Nashville terminus, through a rich section to the Illinois Central in Mississippi. According to the present plans work will be commenced as soon as necessary details are completed.

New Roads for Kansas.—A State charter has been granted in Kansas for the construction of a new north and south line in that State. The proposed road runs from Washington and Concordia through the counties of Sedgwick, Harvey, Martin, Dickinson, Saline, McPherson, Ottawa, Cloud, Clay, Republic and Washington, a distance of 200 miles.

New Canadian Transcontinental Line.— The name of the proposed new transcontinental road for Canada has been changed from the All-Red-Line to the Labrador, Quebec & Southern. Its proposed length of 3,270 miles has been reduced more than one-third, and its capital stock to $10,000,000. The line, as now authorized by the Canadian Railway Commission, is to run west from Cape Charles to the Peribonka River, 600 miles; thence through the Peribonka Valley to a point on Lake St. John, 200 miles more; on to the city of Quebec.

Work on New Arizona Road Begun.—The first spike in the Yuma Valley Railroad has been driven. The new railroad is being laid on top of the broad levees constructed by the reclamation service to protect the Imperial Valley and the Yuma Valley lowlands from floods of the Colorado River. Its purpose is mainly for transportation of rock and machinery required to repair the levee system, but it will also be utilized by farmers to market their products. The line will be twenty-one miles long.

One other railway only in this country is exclusively owned and operated by the Government. This is the Arrow Rock Line in Idaho, ten miles in length.

New Road from Denver to San Diego Proposed.—Articles of incorporation for the Southwestern Pacific Railroad which capitalists purpose to build from Denver to San Diego, Cal., have been filed with Secretary of State Jordan. The capitalization is cited as $2,200,000. Colonel D. C. Collier, of San Diego, president of the company, said the railroad would cost approximately $105,000,000 for its 2,200 miles of track. The main line, between Denver and San Diego, will total 1,021 miles. A branch will run from Denver to Salt Lake, with several others to mining districts.

FOREIGN ROADS.

Characteristics of German Freight Traffic.—Characteristics of the freight traffic of Germany are brought out in the Statistical Abstract of that Empire, the 1914 edition of which has just appeared. No less than seventy different groups of commodities are reported as to tonnage by railroads and by inland waterways. Coal, the principal commodity, forms about one-fourth of the total tonnage both by rail and water. Other commodities, in order of importance, are stone of various kinds; earths; coke (from coal); brown-coal briquettes and brown-coal coke; iron ore; brown-coal (unworked); fertilizers; beets; iron rods, frames, bands, etc.; wood for building, etc.; wood for fuel, etc.; pig iron; cement and cement blocks; coal briquettes; lime; round timber; scrap iron and steel; flour and other mill products; potatoes; and a long list of smaller items.

Live stock constituted but a small fraction of the total traffic, and was carried almost exclusively by rail. The cattle carried during the past several years numbered about 6,000,000 to 7,000,000 annually; sheep about 2,000,000; swine 13,000,000 to 17,000,000; horses, mules and asses 600,000 to 800,000.

Of the grain hauled by rail in 1912, there were 3,721,000 metric tons of barley; 3,180,000 of wheat and spelt; 2,854,000 of rye; 2,134,000 of oats; and 1,197,000 metric tons of corn. Potatoes amounted to 4,073,000 tons, or more than any one kind of grain.

In 1912 the total railroad traffic was 479,230,000 metric tons, of which 120,221,000 consisted of coal, 46,276,000 of stone, 34,507,000 of earths and 25,484,000 of coke.

Compared with railroad traffic, the river traffic in some commodities is fairly important. Coal on German rivers amounted to 25,371,000 metric tons, or about one-fifth that carried by rail; iron ore tonnage was 10,025,000 by river and 18,637,000 by rail; while earths made 12,134,000 metric tons on waterways and 34,507,000 on railroads. Most other commodities were carried in far greater quantities by rail than by river. The entire traffic on inland waterways in 1912 in Germany amounted to 93,481,000 metric tons, or less than one-fifth the railroad traffic.

ELECTIONS AND APPOINTMENTS.

Executive.

Edward A. Bynum, vice-president and general manager, Texas City Terminal Company. Headquarters, Texas City, Texas.

W. R. Campbell, vice-president, Susquehanna and New York Railroad. Headquarters, New York.

E. C. Deal, vice-president and chief engineer, Carolina and Yadkin River Railroad. Headquarters, Greensboro, N. C.

Lawrence V. Guild, assistant to the president, Kansas City, Mexico and Orient Railway. Headquarters, Kansas City, Mo.

James H. Hustis, president, Boston and Maine Railroad. Headquarters, New Haven, Conn.

R. A. McTyer, president, Greenville and Western Railway. Headquarters, Atlanta, Ga.

F. A. Peil, assistant to the president, Oregon-Washington R. R. and Navigation Company. Headquarters, Portland, Oregon.

Frank Scott, vice-president and treasurer, Grand Trunk Railway. Headquarters, Montreal, Que.

William C. Tompkins, assistant to vice-president, Grand Trunk Railway. Headquarters, Montreal, Que.

Financial.

J. R. Frink, secretary and treasurer, Macon, Dublin and Savannah Railroad. Headquarters, Macon, Ga.

James A. Yates, assistant treasurer, Grand Trunk Railway. Headquarters, Montreal, Que.

Accounting.

W. H. Ardley, comptroller in charge of all accounting, Grand Trunk Railway. Headquarters, Montreal, Que.

D. W. Beddo, auditor of freight receipts, Texas and Pacific Railroad. Headquarters, Dallas, Texas.

A. J. Biard, assistant auditor, Texas and Pacific Railroad. Headquarters, Dallas, Texas.

H. E. Cartwright, auditor of disbursements, Wells Fargo & Company. Headquarters, Chicago, Ill.

G. W. Danner, auditor of disbursements, Texas and Pacific Railroad. Headquarters, Dallas, Texas.

J. B. Duke, assistant to the controller, Southern Railway. Headquarters, Washington, D. C.

W. T. Gill, traveling auditor, Piedmont and Northern Lines. Headquarters, Charlotte, N. C.

B. Lancaster, auditor of disbursements, Union Pacific Company. Headquarters, Omaha, Neb.

G. R. Martin, assistant auditor of disbursements, Grand Trunk Railway. Headquarters, Montreal, Que.

J. P. Pelham, assistant auditor, Piedmont and Northern. Headquarters, Charlotte, N. C.

J. A. Robinson, auditor of revenue, Southern Railway. Headquarters, Washington, D. C.

H. H. Smith, car accountant, Canadian Northern Railway. Headquarters, Toronto, Ont.

F. E. Stanberry, auditor of passenger receipts, Texas and Pacific Railroad. Headquarters, Dallas, Texas.

F. A. Truan, auditor of freight accounts, Southern Railway. Headquarters, Washington, D. C.

George H. Winsor, auditor and traffic manager, San Benito and Rio Grande. Headquarters, San Benito, Texas.

Engineering and Mechanical.

Edward L. Adams, senior railway signal engineer of the Division of Valuation, Southern District, Interstate Commerce Commission. Headquarters, Chattanooga, Tenn.

E. L. Akans, master mechanic, Southern Railway. Headquarters, Birmingham, Ala.

R. A. Baldwin, engineer maintenance of way, Ontario Grand Division, Canadian Northern. Headquarters, Toronto, Ont.

W. C. Barrett, division engineer, Lehigh Valley Railroad. Headquarters, Sayre, Penna.

F. L. Beal, engineer of valuation, Louisiana and Arkansas Railway. Headquarters, Stamps, Ark.

J. A. Boatwright, master mechanic, Tallulah Falls Railway. Headquarters, Cornelia, Ga.

T. J. Brown, resident engineer and bridge and building master, Canadian Pacific Railway. Headquarters, Cranbrook, B. C.

G. M. Elliott, supervisor of track, Canadian Northern Railway. Headquarters, Perry Sound, Ont.

J. D. Evans, division engineer, Ottawa Division, Canadian Northern Railway.

J. W. Findlay, general foreman, Toronto Division, Canadian Northern Railway. Headquarters, Perry Sound, Ont.

G. Glasford, district master mechanic, Canadian Pacific Railway. Headquarters, Cranbrook, B. C.

Ralph E. Hammond, assistant road foreman, Northern Pacific Railway. Headquarters, Minneapolis, Minn.

R. C. Harris, resident engineer, Canadian Pacific Railway. Headquarters, Calgary, Alta.

E. Haystead, supervisor of track, Canadian Northern Railway. Headquarters, Toronto, Ont.

G. A. Hoag, superintendent of car service, Canadian Northern Railway. Headquarters, Montreal, Que.

Frank Johnson, master mechanic, Southern Railway. Headquarters, Princeton, Ind.

Paul Jones, assistant master mechanic, Southern Pacific Company. Headquarters, Sparks, Nev.

A. G. Kinyon, superintendent of locomotive operation, Seaboard Air Line Railway. Headquarters, Portsmouth Shops, Portsmouth, Va.

T. D. LeMasters, master car repairer, Southern Pacific Company. Headquarters, Ogden, Utah.

D. McDonald, supervisor of track, Canadian Northern Railway. Headquarters, Trenton, Ont.

T. R. McLeod, division master mechanic, Ontario Grand Division, Canadian Northern Ry. Headquarters, Toronto, Ont.

D. H. Martin, chief engineer, new Welland ship canal. Headquarters, Allanburg, Ontario.

R. A. Miller, general foreman, Canadian Northern Railway. Headquarters, Trenton, Ont.

Melvin S. Montgomery, road foreman of engines, Minnesota Division, Northern Pacific Railway. Headquarters, Staples, Minn.

W. C. Moore, road foreman of engines, Ottawa Division, Canadian Northern Railway. Headquarters, Trenton, Ont.

E. Myers, roadmaster, Ottawa Division, Canadian Northern Railway.

C. B. Oakley, supervisor of track, New York Central & Hudson River Railroad. Headquarters, Rochester, New York.

O. Ogden, supervisor of track, Canadian Northern Railway. Headquarters, Ottawa, Ont.

Mark H. Reasoner, assistant supervisor of stations, Minneapolis, St. Paul & Sault Ste. Marie Ry. Headquarters, Minneapolis, Minn.

W. J. Rennix, district master mechanic, Canadian Pacific Railway. Headquarters, Calgary, Alta.

W. H. See, supervisor of bridges and buildings, Canadian Northern Railway. Headquarters, Toronto, Ont.

F. C. Simpson, master mechanic, Virginia and Southwestern Railway. Headquarters, Bristol, Tenn.

E. A. Sweeley, master car builder, Seaboard Air Line. Headquarters, Portsmouth, Va.

E. M. Sweetman, master mechanic, Southern Railway. Headquarters, Spencer, N. C.

Thomas Turnbull, assistant chief engineer, Canadian Northern Railway. Headquarters, Winnipeg, Man.

C. A. Veale, signal supervisor, Tuscon Division, Southern Pacific Railroad. Headquarters, Tucson, Ariz.

W. Walsh, supervisor of track, Canadian Northern Railway. Headquarters, Trenton, Ont.

J. W. Williams, chief engineer of construction, Northwestern Pacific Railroad. Headquarters, San Francisco, Cal.

G. H. Wion, assistant signal engineer, Victorian Government Railways. Headquarters, Melbourne, Australia.

F. K. Zook, chief engineer maintenance and structural engineer, Northwestern Pacific Railroad. Headquarters, San Francisco, Cal.

Operation.

R. H. Allison, division superintendent, Atchison, Topeka and Santa Fe Railroad. Headquarters, Marceline, Mo.

J. F. Barnes, trainmaster, Third District, Oregon Short Line Railroad. Headquarters, Pocatello, Idaho.

A. F. Brewer, superintendent, Utah-Montana Division, Oregon Short Line Railroad. Headquarters, Pocatello, Idaho.

F. R. Blount, superintendent, Panama Railroad. Headquarters, Colon, Panama.

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John S. Brown, manager of the transportation department, Chicago Board of Trade. Headquarters, Chicago, Ill.

J. L. Burd, superintendent, Gulf Division, International and Great Northern Railroad. Headquarters, Palestine, Texas.

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P. T. Carmody, trainmaster, Lehigh Valley Railroad. Headquarters, Cortland, N. Y.

J. W. Carnes, assistant superintendent, Trinity & Brazos Valley Railway. Headquarters, Teague, Texas.

D. B. Carson, general manager, Nashville, Chattanooga & St. Louis Ry. Headquarters, Nashville, Tenn.

W. E. Cline, chief train despatcher, Canadian Pacific Railway. Headquarters, Cranbrook, B. C.

George Collins, superintendent, Ottawa Division, Canadian Northern Railway. Headquarters, Trenton, Ont.

L. V. Combs, trainmaster, Illinois Southern Ry. Headquarters, Sparta, Ill.

D. Crombie, superintendent of transportation, Canadian Northern. Headquarters, Toronto, Ont.

W. J. Curle, superintendent, Canadian Northern Railway. Headquarters, Toronto, Ontario.

R. S. Derbyshire, assistant superintendent, Ottawa Division, Canadian Northern Ry. Headquarters, Trenton, Ont.

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J. H. Dyer, superintendent, Sacramento Division, Southern Pacific Company. Headquarters, Sacramento, Cal.

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P. H. Fox, chief despatcher, Canadian Northern Railway. Headquarters, Toronto, Ont.

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T. W. McGaw, superintendent, Alabama Division, Seaboard Air Line Railway. Headquarters, Savannah, Ga.

E. C. Manson, superintendent of transportation, Oregon Short Line Railroad. Headquarters, Salt Lake City, Utah.

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Rutledge Smith, superintendent, Tennessee Central Railroad. Headquarters, Nashville, Tenn.

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T. L. Terrant, terminal trainmaster, Baltimore and Ohio Railroad. Headquarters, Lorain, Ohio.

John F. Tracy, trainmaster, Northern Pacific Railway. Headquarters, White Bear, Minn.

W. T. Wilkins, trainmaster, Harrisonburg Branch, Washington Division, Southern Railway. Headquarters, Harrisonburg, Va.

T. H. Williams, superintendent, Tucson Division, Southern Pacific Company. Headquarters, Sacramento, Cal.

L. E. Wooten, general manager, Knoxville, Sevierville and Eastern Railway. Headquarters, Knoxville, Tenn.

Traffic.

J. H. Barr, traveling freight agent, Central of Georgia Railway. Headquarters, Kansas City, Mo.

O. H. Becker, district freight agent, Canadian Pacific Railroad. Headquarters, Portland, Oregon.

C. E. Belk, assistant general claim agent, Beaumont, Sour Lake and Western Railroad.

George L. Bodie, traveling freight agent, Toledo, St. Louis and Western Railway. Headquarters, Cleveland, Ohio.

F. G. Browder, Jr., assistant general freight agent, Atlanta and West Point and the Western Railway of Alabama. Headquarters, Atlanta, Ga.

W. R. Busenback, general agent, Erie Railroad. Headquarters, Akron, Ohio.

C. C. Cameron, general freight agent, northern and western lines, Illinois Central Railroad. Headquarters, Chicago, Ill.

C. H. Carpenter, freight claim agent, Alabama, Tennessee & Northern Railroad. Headquarters, York, Ala.

E. S. Center, assistant general freight agent, Atlanta and West Point and the Western Railway of Alabama. Headquarters, Atlanta, Ga.

James J. Cherry, assistant general freight agent, northern and western lines, Illinois Central Railroad. Headquarters, Chicago, Ill.

George A. Clifford, general agent, Canadian Pacific Railway and Minneapolis, St. Paul and Sault Ste. Marie Railway. Headquarters, Cleveland, Ohio.

J. F. Dalton, assistant general freight agent, Norfolk Southern Railroad. Headquarters, Norfolk, Va.

M. T. Dean, general freight and passenger agent, Susquehanna and New York Railroad. Headquarters, New York.

K. Elliott, city freight agent, Canadian Pacific Railroad. Headquarters, Calgary, Alta.

H. A. Fidler, assistant general freight agent, Detroit, Toledo and Ironton Railway. Headquarters, Ironton, Ohio.

Nelson Fleming, district freight agent, Canadian Northern Railroad. Headquarters, Tacoma, Wash.

R. W. Foster, general agent, Chicago, Burlington and Quincy Railway. Headquarters, Portland, Oregon.

W. T. Gill, freight claim agent, Piedmont and Northern. Headquarters, Charlotte, N. C.

J. W. Gray, general claim agent, Houston Belt and Terminal Railroad.

W. B. Groseclose, traffic manager, Detroit, Toledo and Ironton. Headquarters, Detroit, Mich.

F. R. Hanlon, director of traffic, port commission of Seattle. Headquarters, Seattle, Wash.

J. S. Henny, commercial agent, Toledo, St. Louis and Western Railroad. Headquarters, Kansas City, Mo.

George M. Henry, general passenger agent, Detroit, Toledo and Ironton Railway. Headquarters, Detroit, Mich.

Gerald Hiam, division freight agent, Canadian Pacific Railroad. Headquarters, Fort William, Ont.

C. A. Lahey, assistant to the freight traffic manager, Chicago, Milwaukee and St. Paul Ry. Headquarters, Chicago, Ill.

R. E. Larmour, assistant general freight agent, Canadian Pacific Railway. Headquarters, Vancouver, B. C.

E. J. Lewis, commercial agent, Lake Erie and Western Railroad. Headquarters, Minneapolis, Minn.

W. I. Lightfoot, charge of solicitation of all passenger traffic, Nashville, Chattanooga and St. Louis and the Western and Atlantic roads. Headquarters, Nashville, Tenn.

S. G. Lutz, general traffic manager, Chicago and Alton Railroad. Headquarters, Chicago, Ill.

A. A. Martin, freight claim agent, Texas and Pacific Railroad. Headquarters, Dallas, Texas.

C. R. Moffett, commercial agent, Tennessee Central. Headquarters, Knoxville, Tenn.

William Moore, agent, Western Transit Company. Headquarters, Philadelphia, Pa.

C. A. Morse, district freight agent, Canadian Pacific Company. Headquarters, London, Ont.

J. H. Peebles, assistant passenger agent, Nashville, Chattanooga and St. Louis Ry. and the Western and Atlantic Railroad. Headquarters, Chattanooga, Tenn.

Dan C. Pettibone, general baggage agent, Northern Pacific Railroad. Headquarters, St. Paul, Minn.

H. A. Plow, division freight agent, Canadian Pacific Railroad. Headquarters, Vancouver, B. C.

Burton J. Rowe, coal traffic manager, Illinois Central Railroad. Headquarters, Chicago, Ill.

B. D. Shropshire, Jr., commercial agent, Rock Island Lines. Headquarters, Fort Worth, Texas.

Jonathan Story, traveling passenger agent, Wabash Railroad. Headquarters, Boston, Mass.

Boyd Suthers, commercial agent, Norfolk Southern Railroad. Headquarters, Pittsburgh, Penna.

C. A. Torrence, foreign freight agent, Western Pacific Railway. Headquarters, Chicago, Ill.

G. H. Winsor, traffic manager and auditor, San Benito and Rio Grande Valley R. R.

Industrial.

F. L. Merritt, agent, land and industrial department, Southern Railway. Headquarters, Bristol, Tenn.

Purchasing.

D. Kavanaugh, general storekeeper, Western Maryland Railway. Headquarters, Hagerstown, Md.

George L. Mayer, purchasing agent, Ohio Electric Railway. Headquarters, Springfield, Ohio.

E. H. Polk, division storekeeper, Southern Pacific Company. Headquarters, Sparks, Nev.

T. D. Singletary, storekeeper, Macon, Dublin and Savannah Railway. Headquarters, Macon, Ga.

L. C. Thomson, division storekeeper, Ontario Grand Division, Canadian Northern Railway. Headquarters, Toronto, Ont.

Ray F. Transue, storekeeper, Lehigh and New England Railroad. Headquarters, Pen Argyle, Pa.

Miscellaneous.

Frederick A. Delano, member, Federal Reserve Board.

C. E. Denney, assistant general sales manager, Union Switch and Signal Company. Headquarters, Swissvale, Penna.

Safety.

C. H. Blakemore, chairman of the Safety Commission, Norfolk and Western Railway. Headquarters, Roanoke, Va.

RESIGNATIONS.

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John L. Billard, director, New York, New Haven and Hartford Railroad.

J. P. Clark, vice-president and chief engineer, Carolina and Yadkin River Railroad.

E. C. Hoyt, vice-president, Susquehanna and New York Railroad.

J. T. Wright, vice-president and general manager, Macon, Dublin and Savannah Railroad.

Financial.

A. S. Hale, secretary and treasurer, Macon, Dublin and Savannah Railroad.

Accounting.

J. G. Innes, auditor of disbursements, Wells Fargo and Company.

Engineering and Mechanical.

William C. Edes, chief engineer construction, Northwestern Pacific Railroad.

R. A. Lamb, foreman, car department, Macon, Dublin and Savannah Railroad.

E. A. Sweeley, supervisor of car repairs, Atlantic Coast Line.

Operation.

H. E. Allen, superintendent, Trinity and Brazos Valley R. R.

C. E. Bower, superintendent, Waynesburg and Washington R. R.

E. B. Boyd, manager of the transportation department, Chicago Board of Trade.

D. F. Bunch, trainmaster, Tennessee Central Railroad.

B. F. Frobes, superintendent of telegraph, Southern Pacific Railway.

H. B. Grimshaw, superintendent, Alabama Division, Seaboard Air Line.

C. L. Mason, superintendent of terminals, Atchison, Topeka and Santa Fe Railway.

J. W. Mulhern, superintendent, Chicago Division, Pere Marquette Railroad.

W. F. Stark, superintendent, Dayton and Union Railroad.

G. C. Starkweather, general superintendent, Southern District, Atchison, Topeka and Santa Fe Railway.

W. A. Whitney, superintendent, Sacramento Division, Southern Pacific Company.

Traffic.

J. S. Brown, general freight agent, Illinois Central Railroad.

E. L. Cardle, district freight agent, Canadian Pacific Railroad.

A. P. Cooper, commercial agent, Tennessee Central Railroad.

C. T. Davis, traffic manager and auditor, San Benito and Rio Grande Valley R. R.

F. R. Hanlon, district freight agent, Oregon-Washington Railroad and Navigation Company.

E. R. Johnson, general agent, passenger department, Canadian Pacific Railway.

Clayton Jones, freight claim agent, Alabama, Tennessee and Northern Railway.

W. J. Laffey, general claim agent, Houston Belt and Terminal Railroad.

I. G. Thompson, commercial agent, Rock Island Lines.

Industrial.

C. W. Fitch, agent land and industrial department, Georgia Southern and Florida, the Hawkinsville and Florida Southern and the Macon and Birmingham Railroads.

Purchasing.

F. B. Arndt, storekeeper, Lehigh & New England Railroad.

J. F. Hoyer, purchasing agent, New Orleans Great Northern Railroad.

Co-operation and Efficiency.

By Charles W. Tomlinson, General Eastern Freight Agent, Baltimore and Ohio Railroad.

THE science and study of efficiency is a matter of recent years, but like the Tango and Maxixe, it has become a wave, and is being advocated and studied on all sides.

"Safety First," which is an efficiency measure, is but a new version of an old rule in railroading, "in case of doubt, take the safe side," published in time cards before the days of the telegraph, telephone or train order, and stood for the same thing as "Safety First," only now its application is unlimited. In those days the most terse and impressive slogan was "Do It."

Efficiency has a double value, a quadruple value, an unlimited value. It is not something to be reserved for the comprehension of the elect. It is not a thing to be called scentific management and used as a bugaboo. It is on the contrary, nothing but common sense, applied to every day affairs. The doing of a thing in a better, quicker and more economical way than at present, the doing of a thing in the right way, the easy, the adept, the direct and natural way, rather than in the careless, slovenly, wrong, or roundabout way. Efficiency is the duty not alone of every man to himself, but every man to his neighmor. It is a slogan that means prosperity, and a watchword of honest effort, and will direct energy. Efficiency in the office means more and better business and larger profits and rightly should receive first attention because all work originates and ends in the office.

Can you figure the price of inefficiency in the office clerk, who, when he dips his pen in the ink bottle, finds there is no ink there?

The machinist who has a job on a whistle and in an eccentric, finishes the whistle and starts on the eccentric, and before getting far, finds he has left half his tools on the cab.

I might say, however, that with the plumber this kind of efficiency has become a science. Did you ever have a plumber come to your house to do a job who opened up his tool bag, looked at the job and found that he had to go back to the shop to get another tool, adding three hours time at plumber's rates to your bill?

Take the yard crew switching. The complaint of the crew in the old days was that the agent, or the traffic department, or the superintendent, was giving instructions which required them to switch until they got all the odd numbers together. To-day, there is danger in the efficiency in switching for one purpose only. It is understood that four switches cost more than two switches in making up a train. Viewed from the standpoint of efficiency in switching only, that is a reduction of 50 per cent in expenses. There is nothing charged against this showing by the man who does the switching, but suppose the other two switches were for the purpose of getting out two cars of freight from two different shippers, which were the first two cars the shippers had ever given the Baltimore and Ohio Railroad. These cars were secured on our advertised fast schedule, this being aside from exigencies, the same as our competitor. By saving these two switches, the freight is forced on to our slowest schedule, which was not in accordance with our sale, as our transportation was sold as No. 97 schedule. Cars arrive at Chicago in six to eight days instead of three to four days. Did that ever occur to you gentlemen who are directly interested in this heading?

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*Extracts from an address delivered to the officials and employes of the Staten Island and New York Terminal Lines of the Baltimore and Ohio on April 18, 1914.

Take the engineer who comes in after a hard run with his engine needing packing. He goes to the blackboard with some of the boys whom he has not seen lately, gets to talking with them, and before they get through he gets a call to go out on an extra trip. The engine has to be gotten right out and there is no chance to pack it.

Then the lighterage department gets orders to place a lighter alongside a steamer. They are not in position to place their lighter alongside owing to ever changing, always different local conditions. Efficiency with the sole object of reducing expenses prompt the efforts to make an extra move for the tug and she is sent away. Thirty minutes later the steamer calls for the lighter, which is there, but no tug to move it. The result is, it is shut out and competitors have the call. The tug finishes its intervening job and comes back, and as the time that a ship can take it is then uncertain is obliged to wait an hour-thirty minutes longer than would have been the case had efficiency prevailed.

The results are now shown alongside of the lighterage department. They are not familiar with it. They do not know it until later when the traffic department, which secured this business on equal terms with its competitors, advises them that by reason of being shut out the shipment was unable to get out of import. Failure to handle the lighters promptly might result in shutting out the shipment entirely, thereby causing a delay possibly of four weeks. The cost of such inefficiency would be very high.

It is important for an agent to strive for efficiency. He receives instructions from the general superintendent of transportation establishing a minimum loading of 10,000 pounds on all merchandise going to points off the local division. This order is given in line of efficiency. Each agent is imbued with the ambition of doing better than any other agent. He, calculates, that if 10,000 pounds is good, 20,000 pounds would be better. He falls short of the 20,000 pounds to a single destination but that 20,000 pounds will have an effect on his average loading. He robs Peter to pay Paul, thereby reducing the tonnage to some other point, depriving him of the necessary tonnage to meet the requirements of the 10,000 pounds loading.

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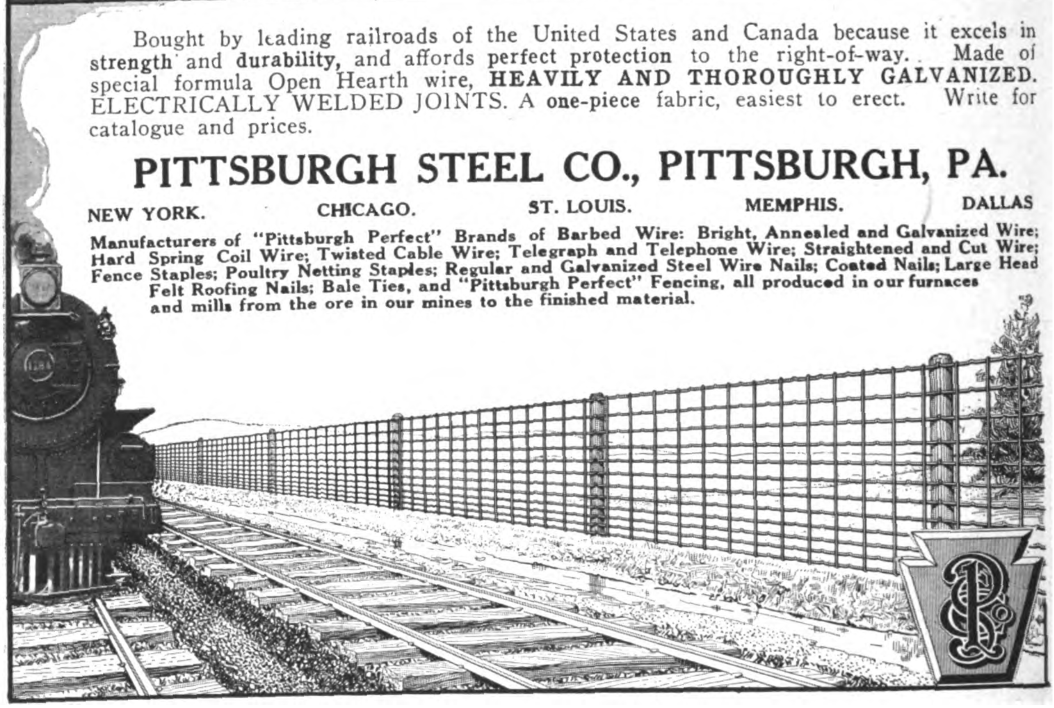

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Railway World

VOL. LVIII. SEPTEMBER, 1914 No. 9

Important Developments in the Transportation Field

THE PLIGHT OF THE RAILROADS

At the urgent appeal of Eastern railway executives, the Interstate Commerce Commission has agreed to reopen the so-called Eastern rate advance case, and, on October 19th, to begin a rehearing of the application of all roads in Official Classification territory for a five per cent horizontal increase in freight rates. While this action, so far as it goes, i
encouraging character, it i
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have been hard put to meet expenses to say nothing of providing for dividend and interest requirements, and the proper maintenance of the plant. Whatever justification governmental authorities may have had for their attitude, no one can deny that the drift of their influence, within the past few years, has been steadily agains
nance of a progr

ed the public to turn from the consideration of their internal problems to the more spectacular developments in Europe, those problems still remain, and have lately been emphasized in a manner which will cause a sad awakening unless unusual efforts are made to solve them.

Business men throughout the United States have been severe in condemning the Interstate Commerce Commission for its unsatisfactory decision in the advance rate case. The bureaucratic methods of this body together with its lengthy discussion of railway ecnomics, do not appeal to the aver-
man who sees in the recent
and expenses a

that are doing large things in a large way to make a large country, to become small and do small things in a small way. The net result of such a policy is retrogression instead of progression and its effect will be to hurt business beyond the dreams of the pessimism so prevalent to-day.

We would prefer to pay a 10 per cent rate of increase and see industry hum with activity and all people actively employed and at good wages and every one contented and all railroads developing and growing and opening up new parts of this great land, than to see a body of men haggle over and try to see how small they can make the rate increase and on how little additional the railroads can just manage to exist and avoid receiverships.

* * * *

Congress should see that the necessary legislation is passed not only to help our merchant marine which needs help most pronouncedly, but also our railroads which need it equally much. To wait for the Interstate Commerce Commission to act
would mean a lingering death to the rail-
the deliberation of the Commission.
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The purpose of this conference is to lay before the President in brief terms the present situation of the railroads of the United States—250,000 miles of great national highways. That the case of the railroads deserves sympathetic treatment arises from the fact that, although privately owned, their property is devoted to public service. The industrial health of the country depends upon an adequate railroad service; such service can not be rendered, and proper response to public needs can not be made, unless the financial soundness of the railroads is maintained.

The credit of the railroads, seriously impaired, as we believe, before the war started, is now confronted by an emergency of a magnitude without parallel in history. To understand the full import of the existing crisis, it is necessary to consider briefly the antecedent conditions.

The purpose here is not to complain but to point out the one paramount fact that by reason of legislation and regulation by the Federal Government and the forty--eight states, acting independently of each other, as well as through the action of a strong public opinion, railroad expenses in recent years have vastly increased. No criticism is here made of the general theory of governmental regulation, but, on the other hand, no ingenuity can relieve the carriers of the burden of expense created thereby. However desirable may have been the expenditures which have been forced upon the railroads, no adequate provision has been made to pay the bill.

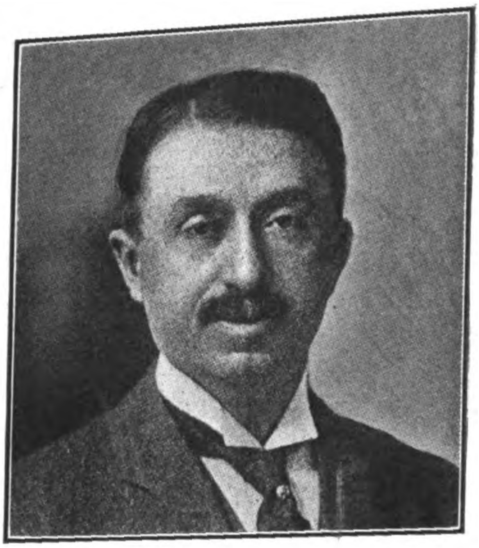
This great increase in expenses now coincides with seriously depleted revenues, with no corresponding ability of the railroads to reduce their costs in proportion. Governments can proceed with expenditures of all kinds by taxation, but railroads can not. While the effect of the European war upon railroad earnings may vary in different sections, it is painfully evident that there will be serious decreases in the total because of the unprecedented difficulties in the marketing of cotton, the great decrease in imports and the general dislocation of trade and industry.

Even prior to the existing emergency and to meet the antecedent situation, railroad expenditures generally had been reduced to absolute necessities. The difficulty of further contraction is enhanced by existing wage agreements and, in so far as the Western railroads are concerned, by the possibilities involved in the arbitration proceedings to which they have recently agreed.

The net operating income of the railroads of the United States for the year ending June 30, 1914, was $120,000,000 less than for the previous year, or about 15 per cent. The gross earnings for the year were $44,000,000 less than for 1913; expenses and taxes were $76,000,000 more.

The maintenance of the credit of the railroads (and the credit of the railroads establishes the standard for all industrial enterprises) depends upon their ability to increase their net earnings. The railroads may have the most perfectly appointed plants in the world, but if the net earnings are not adequate new capital can not be attracted.

In the important Eastern rate case the Interstate Commerce Commission unanimously found that the railroads in the richest section of the country needed more revenue. That finding was based upon the situation prior to the first of July this year; indeed upon conditions of a year previous.



FRANK TRUMBULL.
Who acted as Spokesman for the Railway Executive Committee.

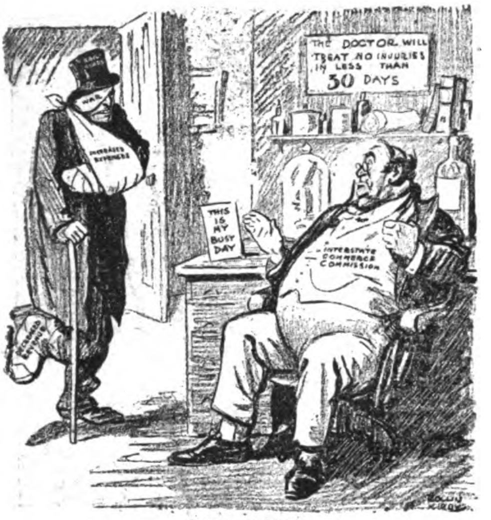
No emphasis need at this time be put upon the new railroad capital which has heretofore been required to provide for normal development but this has been from $400,000,000 to $500,000,000 per annum, and railroads should not only be able to keep abreast of the times, but should even in this emergency be in a position to anticipate the demands of an expanding commerce.

Simultaneously with the great impairment of earnings, general credit conditions have broken down, and the absolute and immediate necessities of both public and private borrowers of money here and abroad have already increased interest rates to a level unthought of a few months ago—rates much higher than present net earnings return upon the railroad property of the United States.

This emergency was not contemplated when the Interstate Commerce Commission rendered its decision in the Eastern rate case, yet the problems now confronting the railroads greatly transcend in seriousness those which existed then. The menace is now not only to railroad credit, but to the transportation service itself, and efficient transportation is inseparably connected with the welfare of our people.

Securities of United States railroads held abroad are computed at from three to five billion dollars. It is a certainty that bond and note obligations of the railroads maturing before the end of next year aggregate over $520,000,000. In the highest public interest it is imperative that these obligations shall be met. Yet it is evident that for a long time Europe will not be a lender of money to America. On the contrary, the war will create such enormous debts and involve such a general dislocation of industry and commerce, that Europe must realize largely on its holdings of American securities regardless of the price obtainable.

The New York Stock Exchange has now been closed for a longer period than at any other time in its history. There is no present market for railroad securities, either old or new. The United States in a condition of financial isolation. If the Stock Exchange were to open (and it must open some time), the pressure of selling would inevitably be greatest against railroad securities. If


THE DOCTOR WILL TREAT NO INJURIES IN LESS THAN 30 DAYS
WAR
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DECREASED REVENUE
THIS IS MY BUSY DAY
INTERSTATE COMMERCE COMMISSION

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From the ***New York World.***

they go down, industrial issues will fall still more seriously. The public necessity to stem this tide of selling and to reduce to the utmost its destructive effect, calls for the exercise of every resource of statesmanship.

Our respectful requests are:

1. That the President will call the attention of the country to the pressing necessity for the support of railroad credit by the co-operative and sympathetic effort of the public and of all governmental authorities, and suggest that the railroads be relieved as far as possible of further immediate burdens involving additional expense; and

2. That the President will urge a practical recognition of the fact that an emergency has arisen which requires, in the public interest, that the railroads have additional revenue, and that the appropriate governmental agencies seek a way by which such additional revenue may be properly and promptly provided.

President Wilson received the committee in a most friendly spirit and promised to give the matter his immediate attention. On the following day, September 10th, he addressed the following letter to Chairman Trumbull:

September 10, 1914.

DEAR MR. TRUMBULL:

Since you read it to me yesterday, I have read again the statement you made me on behalf of the committee of railroad presidents whom I had the pleasure of meeting and conferring with at my office. It is a lucid statement of plain truth.

You ask me to call the attention of the country to the imperative need that railway credits be sustained and the railroads helped in every possible way, whether by private co-operative effort or by the action, wherever feasible, of Governmental agencies, and I am glad to do so, because I think the need very real.

I can not say that I entertain any deep anxiety about the matter, except, of course, the general anxiety caused by the unprecedented situation of the money markets of the world; because the interest of the producer, the shipper, the merchant, the investor, the financier and the whole public in the proper maintenance and complete efficiency of the railways is too manifest. They are indispensable to our whole economic life, and railway securities are at the very heart of most investments, large and small, public and private, by individuals and by institutions.

I am confident that there will be active and earnest co-operation in this matter, perhaps the one common interest of our whole industrial life. Undoubtedly men, both in and out of official position, will appreciate what is involved and lend their aid very heartily wherever it is possible for them to lend it.

But the emergency is, in fact, extraordinary, and where there is a manifest common interest we ought all of us to speak out in its behalf, and I am glad to join with you in calling attention to it. This is a time for all to stand together in united effort to comprehend every interest and serve and sustain it in every legitimate way.

The laws must speak plainly and effectively against whatever is wrong or against the public interest, and these laws must be observed; for the rest and within the sphere of legitimate enterprise, we must all stand as one to see justice done and all fair assistance rendered, and rendered ungrudgingly.

Cordially and sincerely yours,
WOODROW WILSON.

It is hardly necessary to state that the railways were deeply appreciative of the President's attitude and this feeling extended not only through the rank and file of the entire industry, but reached millions of American citizens who, either through their interest in railway investments or their association with industries whose success is largely dependent upon railway prosperity, are equally affected by the Administration's attitude toward the carriers In fact, the President has received so many letters of commendation regarding his attitude that no doubt can be left in his mind as to the feeling of business men towards a railway policy sufficiently liberal to permit the carriers to continue to successfully meet their financial obligations and the increasing demands of commerce. This attitude is well expressed in a letter sent to President Wilson by the Honorable Seth Low, after he had read the communication which the President had sent to Mr. Trumbull. He says:

I have read with a sense of thoughtfulness your letter adressed to Mr. Frank Trumbull, as chairman of a committee of railroad presidents. The importance of keeping railroad securities sound and of maintaining the credit of the roads in this worldwide emergency is so vital to the well-being of everybody that your prompt and hearty recognition of it is of itself of immense value. I am entirely confident that the business world will co-operate to this end with all the more courage because it knows that in so doing it will cooperate with you.

Encouraged by the attitude of the Nation's Chief Executive, the railway presidents on September 15th, after several informal conferences with various members of the Interstate Commerce Commission, filed with that body a petition for a reopening of the five per cent advance rate case. The petition reads as follows:

Your petitioners, 112 railroad companies, comprising the 35 railroad systems in Official Classification territory, parties to the above- entitled proceedings, respectively petition the Commission for such a modification of the order of July 29, 1914, as will permit carriers to make effective the rates specified in the tariffs which were by said order directed to be cancelled. Since the filing of the report and entry of the order by the Commission in these cases, facts and circumstances have arisen which, taken in connection with the facts already before your Commission, your petitioners believe will justify the relief herein prayed for. These facts and circumstances are briefly as follows:

First, during the month of October, 1913, your petitioners published and filed with this Commission the tariffs involved in these proceedings. At the time of the filing of the report of the Commission there were available for the information of the Commission the annual reports of your petitioners for the year ended June 30, 1913, as well as the monthly reports of your petitioners up to and including May, 1914. Since that time the complete income accounts of your petitioners for the fiscal year ended June 30, 1914, have become available.

The reports of your petitioners for the year ended June 30, 1914, as compared with the year ended June 30, 1913, show a decrease in total operating revenues of approximately $44,700,000, while during the same period operating expenses have increased about $23,300,000. After deductions of taxes and deficit in outside operations there was a decrease in operating income of approximately $73,700,000, notwithstanding an increased property investment. Thus the tendency toward a diminishing operating income, found by the Commission in its report, is emphasized by the figures covering the complete year to June 30, 1914, while the reports for July and such figures as are available for August, 1914, show a continuance of this declining tendency, notwithstanding the extraordinary efforts that have been made to reduce expenses.

Second, the unforeseen European war has brought about an unparalleled destruction of wealth and dislocation of credit throughout the civilized world. It is certain that the competition for capital will be keener and interest rates higher for some years to come than in any corresponding period within living memory. The emergency thus resulting is extremely serious. It is conservatively estimated that the railroad companies of the United States have obligations maturing in the next fifteen months amounting to well over five hundred millions of dollars, and it is imperative in the public interest that these obligations shall be duly met. A large part of this sum is owned by your petitioners and they will further need from time to time in the next few years large amounts of money to provide for improvements which will be necessary in the public interest to prevent a serious deterioration in the standard of transportation service. In order to compete effectively for this new capital they must have a material increase in revenues.

Third, the Commission in its report made certain tentative suggestions as to measures which might be taken by the carriers to secure additional revenues. Your petitioners are proceeding as rapidly as possible to put into effect the increase in freight rates in Central Freight Association territory authorized by the report of the Commission and are giving earnest attention to the other recommendations and suggestions of the Commission with respect to other rates and practices.

It is believed, however, that the additional revenue which may be secured by the adoption of means other than a general advance in freight rates can not be obtained in the near future, and when secured will be inadequate to meet the needs of the carriers for increased revenue in the present situation.

Therefore, your petitioners ask that the Commission modify the order aforesaid so as to permit the carriers to make effective the rates specified in the tariffs, which were by said order directed to be cancelled, except so far as they have been or may be superseded by advances filed in accordance with the report of the Commission, and that your petitioners may have such other and such further relief in the premises as to the Commission may seem proper.

This petition was signed by Daniel Willard, president of the Baltimore and Ohio, as chairman of the presidents' committee on behalf of the railroad companies in the Official Classification territory, and Hugh L. Bond, Jr., George F. Brownell, J. L. Minnis, O. E. Butterfield and George Stuart Patterson, counsel for the carriers.

As stated in our opening paragraph, the Commission has decided upon a rehearing, and while it is, of course, too early to state what the Commission will do, its evidently present lenient attitude would appear to offer encouragement for a favorable decision. Certainly the case of the railroads is much stronger than it has been in any of the previous arguments, for the results of recent operations have reinforced their contention that expenses are overwhelming them and making railroading a decidedly unprofitable business. The evidence that the railroads will present will deal almost exclusively with the financial situation in the United States and Europe that has developed as the result of the war. This evidence will be of a much briefer character than submitted in any previous case and the Commission is likely to require but a short time to consider it in view of the ample time taken for a thorough consideration of the original evidence. That the Commission is making an effort to assist the carriers to increase their income is evidenced in that it has entered a formal order permitting the roads in Central Freight Association territory to put into effect the advances in freight rates permitted in the so-called five per cent rate decision, upon ten days' notice instead of the statutory time of thirty days. This, however, is not to apply to grain rates.

While the carriers had hoped for an earlier date on which this rehearing was to begin, the Commission nevertheless showed a commendable promptness in the consideration of the railroads' appeal for the reopening of the case and the out of town members of that body were promptly informed as to the character of the appeal, so that they might give it immediate consideration. In referring to the petition of the carriers, Commissioner Edgar E. Clark, while in Boston on September 17th, for the purpose of attending the Passenger Traffic Officers' convention, made the following public statement:

> In addressing the convention I hope to lay the basis for better relations with the Interstate Commerce Commission. Since the so-called five per cent rate case arose there has been a great deal of misunderstanding in which I can see nothing but harm to all concerned. If the Commission changes its mind as a result of the railroads' petition for reconsideration of that case, it will be on the basis of new facts and new circumstances which they declare they can prove to have arisen since last fall. We have no desire to reopen the old record.
>
> We have known for several days that the railroads intended to come forward with the formal petition just filed. While it may be possible even before October 1 for Commissioners to come to some decision as to whether or not we will reopen the case, it is unlikely there will be any meeting of the full board until October 1, and therefore, if the case is reopened, there can be no formal hearings before next month.
>
> The fear of onslaughts on American railroad credit coincident with the opening of the Stock Exchange is, of course, natural, for the outlook for railroads successfully and satisfactorily to finance themselves and refund their maturing obligations has been very seriously complicated by the financial conditions resulting from the European war.
>
> The Interstate Commerce Commission has no more desire than anybody else to see railroads crippled financially or otherwise. We realize the importance and necessity of well equipped, well maintained, and thoroughly efficient railroads and we know that they cannot be constructed, maintained or operated without money.
>
> If transportation costs more and there are no unreasonable profits, it will necessarily have to be sold at a higher price.
>
> So far as passenger fare increases on mileage books are concerned, the bulk of those recently filed are scheduled by the railroads to become effective October 1. We have given no consideration to the question of suspending these tariffs, and if any protests are filed we shall try to take them up with the railroads before resorting to any suspension of the effective date of the new tariffs, provided, of course, there is time to do so.

It is safe to infer from Commissioner Clark's statement that the Commission will be able to reach a prompt decision and the signs of the times are encouraging for the railroads as some favorable consideration of this question seems immediately imperative. As the Boston *Transcript* puts it:

> Making the railroads stagger on under the burden of oppressive operating expenses and capital costs may appear a just penance for past iniquities—as lying on beds of nails, or treading paths of shattered glass was considered a genial expiation for individual sins in mediaeval times—but "cutting off one's nose to spite one's face" is neither commendable nor economic. Perhaps, we have been inclined to do just this with respect to our railroads. A continuance of such a policy inevitably must react with terrific consequences upon our industrial fabric. The unprejudiced readily can see the justice of the claim made in the new petition that "it is certain that competition for capital will be keener and interest rates higher for some years to come than in any corresponding period within living memory" as an aftermath of the great European struggle.

Financial interests have, of course, recognized for some time the serious predicament of the carriers and the necessity for the prompt procurement of relief. An enormous amount of railway securities are held not only by banks but by insurance companies and many other institutions, and the result of the destruction of railway credit and serious curtailment of the value of their securities, would prove one of the worst disasters which could befall the country. In view of the fact that Europe holds, at the present time, millions of dollars worth of such securities which it is anxious to dispose of as soon as our financial markets again become operative, it is easy to appreciate how vital is the maintenance of railway credit. As the presidenr of the New York County National Bank recently put it in a letter to Senator James A. O'Gorman:

> An extremely grave situation confronts us on account of the certain overwhelming of the investment markets of this country by the enforced liquidation by foreign holders of their investments in American railroad securities.
>
> A close study of the investment markets for over 50 years has convinced me that the popularity of investment in railroad securities has been seriously impaired in recent years by reason of oppressive national and state legislation. In view

of that fact the question arises what can be done with the deluge of our securities which will be poured out on us from the other side as soon as the exchanges are opened and which must be paid for in gold.

Unless immediate relief is given the railroads so as to restore their securities to popular favor with investors no market can be found for those held by foreigners and no money can be raised by the railroads to provide facilities for carrying on the business of the country.

Many letters of similar tenor have been addressed to the President, to Congress and to the Interstate Commerce Commission, and the prevailing idea appears to be that could the railway problem he adjusted in a satisfactory manner, the stock exchanges could be again opened, in spite of conditions abroad, as the foundations of investment distrust, which have rested on the increasingly serious position of our railroads, would be removed and American capital become available for the unusual demands which Europe would place upon us.

Railroad officials are, of course, even more cognizant of the grave danger which threatens the entire industry than even the bankers, and the following statement by B. F. Bush, president of the Missouri-Pacific Railway, which appeared in a recent issue of the St. Louis *Republic,* is worthy of the most careful consideration:

The problems arising from the European war confronting the country as to the difficulties in marketing our many varied productions are momentous. These are receiving deserved consideration by our Government and public spirited citizens, and it is hoped that an amelioration of the harsh conditions encountered will be at once forthcoming.

Serious as these problems are, they are no greater as to their injurious effect on the welfare of the country, in the decline of industry, trade and commerce than those which confront the transportation industry. Though much has been considered and done for the relief of other industries, nothing so far has been suggested to aid the railroad industry, which is all important to every other. For some years back railroads, by reason of diminished net earnings, have experienced difficulties in borrowing money to make necessary improvements to meet the requirements of the expanding business and the public demand for better service. This war emergency will accentuate this situation and further impair their credit, so that under the present conditions of inadequate revenues all attempts to finance railroad securities will be futile.

This is the gravest danger with which railroads have been menaced in their history. They are thus not only deprived of the means to meet current urgent needs in affording adequate service, but they are confronted with the problem as to how they can take care of outstanding obligations which mature in the near future.

A careful computation of these obligations shows there are upward of $578,000,000 in default at the present time, $34,000,000 which must be met before the end of this year and $563,000,000 between now and the end of next year. It is needless to say that if these obligations are not met, other industrial interests dependent on the railroads will be injuriously affected as well as the railroads.

Benjamin F. Bush,
President of the Missouri Pacific System.

The probabilities are that for a long time to come American securities will not find a market in Europe. All surplus capital of that continent will for some years be required to replace the destruction of property and repair the ravages of war. Nor is this all, for we shall likely have to repurchase a large share of the American securities which are now held in Europe. This will throw upon our own people the burden of financing the railroad requirements for an indefinite period, and if the railroads are not to be driven upon the rocks of bankruptcy and deterioration, they must have the kindly co-operation and friendship of the public and our law-making bodies as never before.

It is now quite generally known that for a long period back, even with good crops and prosperous times, railroad revenues have not been adequate for railroad requirements; they have not been sufficient to enable them to establish a sound credit with bankers so as to raise money for improvements and extensions to take care properly of the expanding commerce.

Rate reductions and burdensome regulations prescribed by federal and state authority, together with largely increased taxes and expenses for labor and materials entering into the operation of the roads, have so decreased the net earnings of the carriers as to leave many of them without means to meet their mortgage interest. As a consequence of this their credit has been swept away and they are unable to get new money for necessary improvements and facilities. It is estimated that to provide amply for the constantly increasing business, $50,000,000 of new money is required yearly. Of course, such a sum could not be provided from earnings, though large sums from earnings when available are now spent for the purposes named.

As an instance of how the low rates with the increased expenses work, I may cite the results of operation of the railroads of the country for the last fiscal year ended June 30, 1914. The gross earnings for the year were $44,000,000 less than those of 1913, but the expenses and taxes were $76,000,000 more, making the net earnings for 1914 $120,000,000 less than for 1913. This is $120,000,000 less to meet obligations, which no doubt has been increased during the year by the expenditure of new money for needed betterments or extensions.

How long can the railroad industry of the country continue to give the high standard of service which it now provides and which service is essential to the prosperity of all other industries, trades and callings, with results such as shown for a year's labor? The year cited, with its increased expenses and decreased net, is not an exceptional one. Expenses beyond the power of the management to control have so increased of late years, and enforced rate reductions have so followed one upon the other, that it is only by using every device toward efficient operation that some of our roads are enabled to live.

We are face to face with the gravest crisis in the history of American railroads—so grave, in fact, that those intrusted with the responsibility of their management are for the moment too dazed to fully comprehend the profound difficulties which now surround them. The only hope for them that I can see is, that there be an immediate advance in their passenger and freight rates. The rates now obtainable are not compensatory for the service rendered. This is particularly true of the passenger rates.

Such an advance in the rates as would give the railroads the necessary net earnings, whereby they would establish a better credit with investors, would not be burdensome on any industry, and when resolved to the selling price to the consumer, it would be inappreciable.

Mind you, I haven't lost faith in the future. We have the greatest country in the world and the greatest and most resourceful people on the globe, and if we all "stand as one," as the President says, we shall weather the storm—but in the meantime all thinking men cannot realize too soon the grave exigencies which confront us.

Undoubtedly this great European war has opened the doors to many world markets which have heretofore been closed to us, and in order that we may take prompt advantage of these opportunities it is all the more necessary that our industrial machinery be maintained at the highest possible point of efficiency. A breakdown in our transportation facilities now would be fatal indeed.

Nor am I in a humor to scold or find fault with the troubles we have had in the past. Unquestionably there have been abuses in the railroad world as in all other lines of commercial and industrial activity, but there is little likelihood that there will be much cause for complaint in this respect from this time forward.

With the power to make rates lodged in the Interstate Commerce Commission and the several states and with a closer surveillance of the issuance of all kinds of securities than ever before, the railroads are to-day absolutely in the hands of the people, as their will may be expressed through their law-making bodies. If the people are willing that the railroads shall have living rates for the service they render—if they are willing to protect them against assaults and unreasonable demands of one kind and another, we will make American railroad securities so highly respected as an investment that those of our fellow-citizens who have money—who are our only refuge in the present storm—will be glad to put their savings and accumulations into them.

This is our only hope. When one considers that there are approximately 4,000,000 bona fide holders of American railroad securities at the present time anyone can see how vitally important it is to maintain public confidence in these investments. That the public will not fail us in this crisis—and that, on the other hand, those in charge of the railroads will try harder than ever before to merit the people's confidence and good will, I confidently believe.

RAILWAY MAIL PAY DEVELOPMENTS

There appears to be daylight ahead in the railway mail pay situation. While the railways are a long way from being compensated for the enormous amount of package freight which they have been compelled to carry free of charge under the parcel post regulations, the Committee on Railway Mail Pay has concluded its investigation and asserts in its report, in no uncertain terms, that the railways are badly underpaid for carrying the mails, and that a plan of payment should be at once devised which will appreciably increase their compensation. In view of the findings of this committee, which has given the whole subject a most thorough investigation and has arrived at conclusions based upon hard facts, it would appear distinctly up to Congress and the Post Office Department to take steps promptly in conformity with the committee's suggestions. Certainly the United States Government does not desire to continue to rob the railways now that a committee of its own appointing shows this to be a fact.

The carriers' Committee on Railway Mail Pay of which Mr. Ralph Peters is chairman, recently held a meeting to discuss the report submitted to Congress by the Joint Congressional Committee referred to. After the meeting, Mr. Peters authorized the following statement which shows an earnest desire on the part of the railways to co-operate with Congress and the Post Office Department in reaching a speedy adjustment of the whole question:

It is most gratifying that the Joint Congressional Committee fully and unanimously sustains our main contention that the railroads are now materially underpaid for carrying the mails.

The committee proposes a plan of payment which will give the railroads an increase of $3,000,000 a year, and completely supports the companies in the other leading principles which they have urged, namely:

That the railroads are entitled to a fair commercial profit for carrying the mails; that apartments in cars fitted up as traveling post offices should be paid for; that the railroads should be paid for the terminal messenger service they now perform, and that the system of weighing the mails only once in four years is unjust and unbusinesslike.

While the Congressional committee does not see eye-to-eye with the railroads as to the total compensation due the companies for their mail service, the railroad committee has expressed its willingness to accept the views of the Bourne Committee upon this main question of fact.

We firmly believe that the Congressional committee has canvassed the whole subject most carefully and that its findings of fact embody the sound judgment of an unusually able and impartial committee.

The specific plan proposed by the Bourne Committee for hereafter meeting the underpayment due the companies is open to question. The feeling of the railroad managers is that the present system of payment, based on the weight of the mails and the distances over which it is carried, is scientific, and, that if fairly administered, it should be satisfactory. It actually measures and provides payment for the actual service performed. The proposed plan does not.

That, however, is a technical matter. The Bourne Committee has established the doctrine that the railroads should be compensated on a commercial basis for the services they render. The railroad committee is now prepared to cooperate with Congress in establishing detailed standards of payment which should place this purely commercial relation of the Government and the railways upon a sound business basis.

In reviewing the whole situation, it is of interest, as illustrating the glaringly inaccurate statements which emanate from Governmental sources from time to time, to note that three years ago Postmaster-General Hitchcock announced to the public that the Post Office Department had found the railroads to be over-paid by $9,000,000 per year. This "finding" has now been completely demolished as the result of the most thoroughgoing inquiry ever made into railway postal conditions. The position that the railroads should, in fairness, be paid more is not only sustained by the Government's own Congressional Investigating Committee, but the general principles of the Post Office Department's policy toward the railroads and against which the companies have so long protested are condemned. The Congressional committee also decries the doctrine in the last annual report of the Postmaster-General that "rates for carrying the mails on railroads should be less than those which might be fixed for commercial purposes."

The committee report replies:

> Do we ask a mail clerk to work for less than a normal salary because he handled letters?
>
> The patrons of either freight or passenger service should pay no more and no less than a fair rate, and the Government should pay no more and no less than a fair rate for the transportation of mail.
>
> The money paid for freight, passenger, express and mail transportation is all ultimately paid by the public. Fair rates should be made in all branches of traffic, otherwise a deficiency of return from one branch must be made up by an overcharge from another branch.
>
> The Government is the people organized. The patrons of the freight or passenger train services are the public unorganized. We see no reason for favoring the people organized as against the people unorganized.

Considering the right to a fair profit on the part of the carriers, the committee states that:

> Regarding the certainty of the traffic, some claim that the railroads are not compelled to spend as much to get the mail traffic in the way of advertising and traffic bureaus as in the case of the passenger traffic proper, and argue that this would tend to make the mail car somewhat less expensive per mile than the regular passenger car; but even if this were a fact, it is in no wise in conflict with the commercial principle. * * *
>
> Unfortunate also is the attempt of the department to find an analogy between the commutation passenger traffic and the mail traffic. The making of low rates per passenger is not in conflict with the commercial principle. The earnings per car mile may be greater than in the regular passenger service. * * * *
>
> In the matter of the certainty of the payment, we can see no reason for regarding the department as a favored shipper. Is payment once a month for mail service any better than payment in advance from the passenger?
>
> It is said that railroads are not built primarily to carry the mails. This may be true. They are bult primarily to get all the traffic that can be developed, and, according to the commercial principle, each great branch of that traffic should, if possible, be made to bear its proportionate share of the expenses. * * * *
>
> We are asked to consider the principle of "public utility" as a reason for departing from the commercial principle. Just as railroads accept a low rate of profit on one class of freight in order to develop a given territory, they might, it is urged, be called upon to make a special rate on mail because mail helps to diffuse intelligence.
>
> The desirability of diffusing intelligence may well be taken into account in fixing the postage rates to be paid by the public, but it is not clear that this has any connection with what the Government should pay the railroads. * * * *
>
> Does the manufacturer of desks make a special price to the Post Office Department because the mail service helps to diffuse intelligence?

Then why should the railroad, which is merely another instrumentality used by the Government in its mail business, sell its services at an abnormally low rate if the Government is able to pay the normal rate?

The original estimate of $9,000,000 overpay was based on a proposal submitted to Congress by the then Postmaster-General, Mr. Hitchcock, who proposed to save the Government that amount yearly by paying the railroads on the basis of the estimated operating cost of carrying the mails plus six per cent, with no allowance for return on capital. Considering this question the report says:

Evidently Mr. Hitchcock, and his Departmental committee studying this problem, failed to realize that rights of way, roadbeds, tracks, equipment, and terminals were necessary prerequisites in the operation of mail cars, as no allowance whatever was made in the suggested method of payment for capital charges.

No reasonable man can expect that the Government can increase its postal revenues at an average rate of $13,000,000 per year without increasing its expenses in practically all departments of the service, though perhaps at a smaller ratio.

In this connection it is pertinent to remark that although the postal revenues doubled in that ten-year period, railway mail compensation increased only 20 per cent.

In what manner the Bourne Committee has supported the fundamental contentions of the railroads as to *the fact* of underpayment and unfair treatment, the following principles for which the railroads have contended may be repeated:

1. That the quadrennial system of adjusting payments to the increased weights of the mails is unjust and unbusiness-like.
2. That the railroads should be paid for the messenger and terminal services they now perform without pay.
3. That apartments fitted up as traveling post offices in cars partly used for other purposes should be paid for.
4. That the railroads are entitled to a fair commercial profit for carrying the mails.
5. That the rates of pay and conditions of the mail service should be fixed by law and not left discretionary with Post Office Department officials.

This is what the committee says:

The country is divided into four divisions, weighings being made in each division every four years. This method is antiquated, unscientific, and unsatisfactory, as a quadrennial weighing in a postal division must be unfair to the Government in cases where there is a decrease in the volume of mail in the four-year period and unfair to the railroads in case there is an increase.

No actual data are obtainable as to the actual increase or decrease in the weights of mail, though under a weight system the lack of this information in the Post Office Department was a great surprise to your committee.

The annual post office report shows, however, an average increase in mail revenue of 7 per cent for the past 10 years; hence, undoubtedly, there has been an annual increase in the volume of mail during the same period.

If the increase in weight has been proportional to the increase in revenue, then under the present quadrennial weighing system the railroads of the country have received no compensation whatever from the Government for about 14 per cent of the mail carried by them during each four-year period. * * * *

Since expansion of the parcel post, the quadrennial weighing has become much more unsatisfactory as a means of determining the compensation to be paid for transportation.

It is no more reasonable or just to compel the railroads to deliver mail to a post office after it reaches the depots or terminals than it would be for the Interstate Commerce Commission to require the railroads to furnish taxicabs free of cost to take passengers to their homes on arrival at their destination depots, or motor trucks to move freight from the freight terminals to the consignees at the expense of the railroads.

Hence we provide in our suggested plan for the relief of the railroads from this unjust burden now placed upon them. * * * *

Conveyance of mail on city streets is no proper part of railroad duty. Railroad transportation, both freight and passenger, begins and ends at railroad depots and terminals.

The committee considers that the free transportation of Post Office Department employes should be limited to those actually engaged in the railway mail service, when on actual duty in such capacity, in contrast with the Moon bill provision for free transportation when on official duty of any character. On this point the report says:

The railroads should no more be expected to carry postal employes free of charge when not directly and officially connected with the Railway Mail Service than they should United States Government engineers, officers, or employes of any other department in our Government.

In discussing the Government ownership of postal cars, the committee states that:

Our study of the subject has convinced us that Government ownership of post office cars is entirely impracticable and would be much more expensive to the Government than the present system of compensation. At present the railroad companies own the cars and pay all the expenses of heating, lighting, repairing, painting, cleaning, inspecting, furnishing ice water, etc.

If the Government owned these cars, which would be scattered throughout the United States, it would be compelled to employ skilled inspector to guard against development of defects whic would render the cars unsafe, would employ cleaners and arrange for heating and lighting, would

> maintain repair shops and employ expert mechanics.
>
> We do not believe that any person of business experience will doubt for a moment that to maintain the comparatively few R. P. O. cars used in the Railway Mail Service would cost the Government many times what it costs the railroads.
>
> Nor do we believe that any one, after giving the subject consideration, will contend that the railroads should be required to haul such Government-owned cars without additional compensation for the service rendered.

The conclusions of the committee are particularly significant in that, by inference at least, they severely condemn both the actions of the Post Office Department and certain members of Congress in attempting to make a political issue of this matter, and to dispose of it without giving it any fair or intelligent consideration. The exact words of the committee in this particular are as follows:

> It has been our view that it is not our duty to endeavor to make out a case that is favorable or unfavorable to either the Government or the railroads, but to ascertain with as great accuracy as possible what is a reasonable compensation to be paid.
>
> We believe that the Government should deal
> with its citizens, for if it expects them to
> with one another and with the Gov-
> Government must set the example
> with them.
> at it is popular to denounce
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> ould equitably be re-
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> railroads or
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the committee found that 7 cents must be added, making .25.49 cents per mile necessary if the railways are to make their mail traffic relatively as profitable as their insufficiently profitable freight and passenger services. Yet the Post Office Department in a proposed readjustment of mail pay purposed to set less than 21.8 cents per car mile. "If similar unprofitable rates," says the Bourne report, "were made on all railroad traffic, the roads would necessarily have to go into bankruptcy, because there would be no sufficient allowance for capital charges."

This discrepancy between expenses and earnings, moreover, prevailed before inception of the parcel post added its immense tonnage of former express and freight matter to the contents of mail cars.

From 1903 to 1912 express revenue of the railways increased 91 per cent, while mail revenue increased only 22 per cent, showing, says the Congressional committee "that the express payments have been responsive to the growth in traffic while the mail payments clearly have not."

> The annal Post Office Reports show an average increase in mail revenue of 7 per cent in the past ten years; hence, undoubtedly, there has been an annual increase in the volume of mail during the same period. If the increase in weight has been proportional to the increase in revenue then under the present quadrennial weighing system the railroads of the country have received no compensation whatever from the Government for about 14 per cent of the mail carried by them during each four-year period.

A more extended review of the final report submitted by the Joint Congressional Committee on Railway Mail Pay will be found in another section of this issue.

BOURNE
ENT

A positive and plausible statement from an apparently reliable source will always be accepted by most people as true
however erroneous it
f fact. This is particu-
statement is from a
appears in printed

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rnment would
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by purchase and ownership of the railway post office cars. The statement appeared plausible and there was no contradiction. For more than twenty-five years this declaration has been accepted as true by the great majority of people though men in official position have doubted its accuracy No proof on the subject has been presented until recently, when the subject was discussed at length by Hon. Jonathan Bourne, Jr., chairman of the Joint Congressional Committee on Railway Mail Pay, in the report of the committee's work and its conclusions.

In that report Mr. Bourne shows that if the Government owned the cars and paid the railroads the usually prevailing rates for transportation of the same and paid the expense of maintenance, repairs, inspection, icing, cleaning, lighting, etc., the Government would pay more than it does to-day.

After presenting statistics showing that under government ownership of railway postoffice cars the expense to the Government would be greater than under ownership by the railroads, Mr. Bourne asserted that purchase of the railway postoffice cars would also be unwise because it would be the beginning of the general government ownership policy, eventuating in bureaucratic paternalism, inertia, and, inside of a century, governmental dissolution. He cited the fact that under general government ownership of public utilities there would be over three million governmental employes, that in the last ten presidential elections the President has been elected by a plurality of from 7,000 to a little over 2,500,000, and that, therefore, government employes could absolutely control the government, the tendency being more pay, less service in go
ernmental employment, resistless effor
the part of outside labor to secure g
ment employment because less one
more remunerative and dissatis
irritation in all private ente
Bourne's chief objection
ownership is apparently b
reaucratic system which
for he concludes his di
ject as follows:

> Governmental effici
> tion can never equal
> the whole desider
> equal legal oppor
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> ing on the per
> Our present dr
> tion, instead

> greatest menace to the future of our country, would, in our opinion, be greatly accentuated by governmental ownership.

Another view on this same subject is strikingly expressed in an article by Francis Nelson, which appeared in a recent issue of *Leslie's Weekly*. We quote from it in part, as follows:

> By intensive regulation the Government now dominates the earning power of the transportation lines. In fixing rates it sets a measure on the revenues without regard to the inroads made upon them by the unchecked demands of labor and the increased costs growing out of mandatory legislation.
>
> The earnings of railroads are applied to cost of equipment, maintenance of way and property, wages and the payment of dividends to the owners. Depreciation of equipment, way and property never ceases. In recent years the cost of labor is constantly rising. The Government studiously fights shy of any regulation of this charge but legislation has helped to swell it by specifically fixing the hours of labor as well as by super-manning the trains. The payment of dividends is the just increment of the investor's confidence. The charges for these items are inherent in the operation of a railroad. If they are not earned bankruptcy is inevitable.
>
> Going railroads also require from time to time additional capital for extensions and enlar
> ments in order that they mav fit their se
> public reqirements. If there is no sur
> paying the necessary costs of opera
> dends they must borrow money.
> islation makes this excessive
> possible. Hence credit is
> This is the situation:
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A government monopoly is a quencher of private enterprise,—a velveted iron hand held above the fortunes of the people. The ways of monopoly are ingenious and disingenuous. It is a euphemistic delight to the patriotic citizen to pay taxes as such. How tickled he will be when he awakens to the realization that in swelling transportation charges he is paying more taxes in support of a vast government monopoly. The Government now has under its paternal wing one monopoly—the mail service. Is the human imagination elastic enough to visualize what this service would be without the use of privately owned transportation lines as its carriers?

A French economist, M. Guyot, has just published a book which gives a body blow to government ownership. He analyzes conditions in Italy, France, Switzerland, Prussia, Germany and New Zealand, and finds no argument for public ownership to effectually set up against the efficiency of the American railroad. His conclusions resolve themselves into one of three situations: Being profitable and the profit absorbed by the public treasury, the interests of shippers and passengers are sacrificed to those of the Government. Being operated at a loss and the deficiency made up by taxation, the interests of the taxpayers are sacrificed to those of the shippers and passengers. All other interests being sacrificed to those of the employees, political considerations overwhelming those of transportation, is a condition inseparable from State ownership.

AND THE PEOPLE IMAGINE A VAIN THING?

THE DESTRUCTION OF A USEFUL INDUSTRY

While the carriers have been forced into a prolonged and expensive effort to procure even a consideration of their claims regarding the additional burdens placed upon them through the operation of the parcel post, express company profits, owing to the unequal competition of this new branch of the Postoffice Department, are rapidly nearing the vanishing point.

With above 4,000 more miles of railway covered by their services eleven express companies operating in the United States during ten months of the last fiscal year experienced a loss of 85 per cent in operating income. Official figures just published by the Interstate Commerce Commission, analyzed by the Bureau of Railway News and Statistics, show that for the ten months to April, 1914, operating income for these eleven companies was $628,487, only 15 per cent of the operating income for the corresponding period in the year before, or $4,231,465.

So drastic an exhibit as this raises the question before the American people whether they desire to see the express business wholly taken from private management and given entirely to the Government through the parcel post. The showing is the direct result of the immense deflection of tonnage formerly carried by express to the parcel post, which in its competition for the business has enjoyed the overwhelming advantage of being able to increase its tonnage steadily through raising of the weight limit on parcels admitted to the mails while refusing with impunity to bear the increased expenses entailed, as would be necessary for a commercial enterprise, by withholding from the railways increased remuneration to cover the heavier work of carrying the enlarged mail tonnage. At the same time rates on the traffic left to the express companies has been cut 16 per cent.

In gross receipts from operation for the ten months, due largely to these influences, there was a loss of more than $8,000,000. Payments to the railways for their service in the express business conseqeuently fell more than $3,000,000, while the tonnage which would have saved this revenue for the carriers as express was carried by the same railways without pay in mail cars. Operating revenues of the express companies thus fell $5,000,000, while a reduction of only $1,500,000 in expenses left a loss in net of $3,500,000, which was aggravated by an increase in taxes.

For April alone, due to the same conditions, operating income fell from $437,826 in 1913 to $48,747 in 1914.

The figures for the ten months and for April are as follows:

Ten months	1914.	Loss.
Mileage	303,986	*4,213
Gross receipts	$132,646,163	$8,382,778
Express privileges Dr.	66,413,551	3,266,223
Total revenue	66,232,612	5,116,555
Expenses	64,376,816	1,581,227
Net revenue	1,855,796	3,535,328
Taxes	1,227,309	*67,650
Operating income	628,487	3,602,978
April.		
Gross receipts	$12,839,513	$970,175
Express privileges Dr.	6,475,442	373,537
Total revenue	6,364,071	596,638
Expenses	6,185,416	226,738
Net revenue	178,655	369,900
Taxes	129,908	*19,180
Operating income	48,747	389,080

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* Increase.

Of the eleven companies covered by the official figures, five reported operating deficits for the ten months. One of the largest express companies alone during that period took in $466,258 less than it paid out to operate, and after paying taxes reported a deficit of $635,657 for the ten months' operations. The others had operating deficits of

$612,965, $247,091, $38,965 and $26,593, respectively.

A MORE ENCOURAGING OUTLOOK

In spite of the calamity howler, there are many indications that the fall and winter months will show a distinct improvement in business and a decided restoration of confidence. There are several reasons why such results may be anticipated. First, the initial shock of the great European war has been largely dissipated and many of the business readjustments for which it was responsible, have been or are being accomplished.

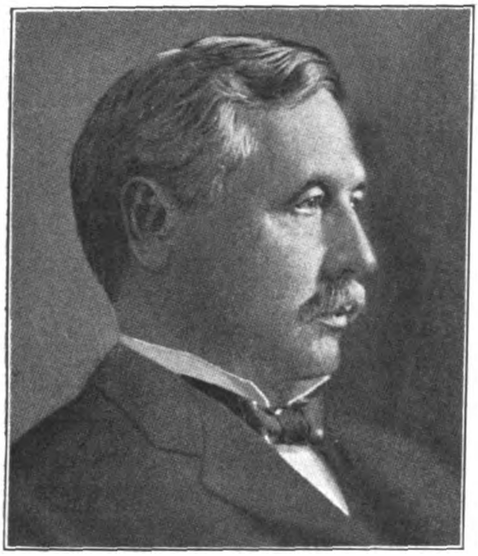
Second, the ocean highways have again been opened to international commerce and the European demand for our products is rapidly increasing, particularly with reference to foodstuffs. Already the export movements of grain and other food products has reached a volume in advance of last year and it may be confidently stated that this demand has only begun. Under existing conditions, we can sell our export grain to Europe, at a price far in advance of that of recent years, and still leave their demand far from satisfied.

Third, reports from the West indicate a general improvement in the business tone of that section, and Western railway presidents, who have recently been giving the general situation a closer scrutiny, are largely of the opinion that the tide has turned and that there is real reason for a more optimistic outlook for the future. With characteristic enterprises and confidence, the American business man, manufacturer and farmer, are rapidly adopting methods to meet the stress of the war and to harmonize their operations in accordance thereto. To quote from a statement recently made by President W. B. Scott, of the Sunset Central Lines:

> One thing we must not forget in considering the matter from the viewpoint of either railroad or business man is the always intresting fact that no matter what happens the millions must be fed and clothed. As Europe now warring represents several hundred millions of persons, the majority of whom are barred from tilling the soil or operating the factories, who will be in a position to feed and clothe them except the United States, or the countries south of us?
>
> It is in this phase of the situation that we must take comfort. The South is the cotton producer of the world, and if the marketing of the staple is now problematical, this problem will not long remain unsolved. The economic situation is too acute to permit the vast sum of money represented by our cotton production to remain quiescent or unproducing, as the effect of such a policy would be disastrous to banking interests, farmers and the Government. Therefore cotton must be sold for a fair price; must be moved to the consuming markets, be put on the loom and issued to the trade. The present "wait" can be only temporary, and the final result will put money into the pockets of the interests which will settle the vexing questions with proper justice to the producer and the people who depend upon him.
>
> The farmer is the man to get busy. Grain products are bound to be in demand next year, no matter what happens, and the great crop of this year will find its way to the granaries of this country and of the Old World, and should find its way there, too, without the consumers of America being unduly held up as a result of individual or collective rapacity.
>
> The demand for American products will increase naturally. Europe and the countries supplied by Europe will look to us for relief. Farm and manufactured products will be properly stimulated and we should reap the reward of our preparedness. It is therefore up to us to get in position for the coming demand, and the farmers should be encouraged and assisted in every way possible to meet the contingency. We need the farmers, and more of them, for upon them rests the "other fellow's" burden, and in proportion to their prosperity and enterprise all other industries flourish or decay.
>
> The railroads are part of the whole. They are the connecting links between the producer and the consumer, and must profit or lose as the general business waxes or wanes. I am enough of an optimist to believe that whatever depression may seem to or does exist just now will be totally eliminated as we realize just how potent a force in the commercial and producing situation we represent. Trade must continue and traffic move. Out of it we shall all ultimately profit.

President Scott is by no means the only railway executive who is taking a hopeful

WILLIAM R. SCOTT,
President of the Sunset-Central Lines.



A. J. Earling,
President of the St. Paul System.

view of the future. According to a statement by President Earling, of the Chicago, Milwaukee and St. Paul, there is much less apprehension in the West regarding the effects of the European war than in the East. He significantly points out that the grain movement throughout that section is considerably ahead of a year ago and he is of the belief that a much larger tonnage will follow.

James J. Hill affirms that the American people at this time should realize the full and wonderful opportunities offered as a result of the terrible struggle now taking place in Europe. He adds, however, that while the country must not necessarily go slow, it should, in the conduct of its National and trade affairs, be governed by extreme caution. He points out that the prosperity of the farming business must, in general, greatly improve and that there will be plenty of work for every branch of activity throughout the Nation during the coming year, if the people will exert the necessary judgment.

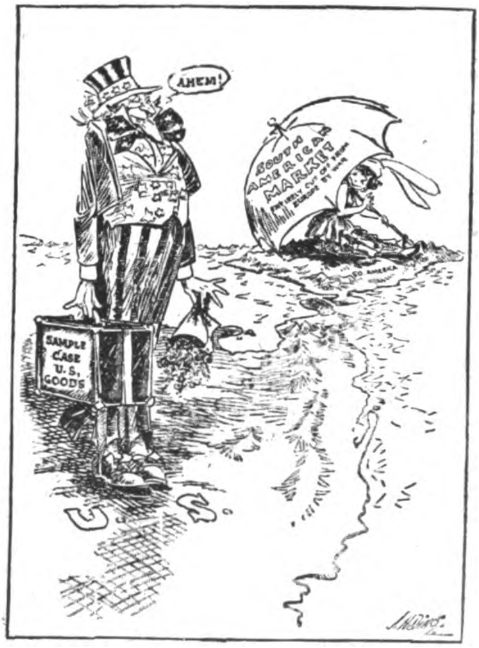
In addition, as pointed out elsewhere, the railway situation has recently given indications of better times ahead. The Interstate Commerce Commission's attitude appears friendly and a desire to prove of real assistance to the carriers has at last become manifest. Should the five per cent increase in rates be granted and should traffic increase as is now confidently expected, railway conditions will greatly improve and the stimulating effect of this betterment will be felt throughout the entire country.

NEW CURRENTS OF TRADE

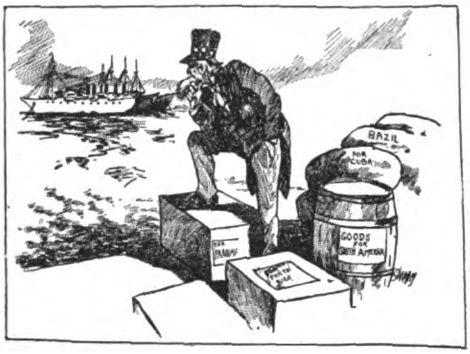
The European war is is likely to establish new currents of trade of vast importance between the United States and foreign countries, particularly those located in South America. Manufacturers and merchants are already beginning to seriously consider taking advantage of these opportunities and a great stimulation in the interchange of commodities with these countries can be confidently anticipated. Furthermore, the opening of the Panama Canal has guaranteed easy access to the western as well as the eastern coast of this great continent.

These countries, up to within the beginning of the European war, had been buying largely from Great Britain, France and Germany, particularly from the last named country, and must now find a new source of supply. There is every reason now why the United States should obtain a large share of this trade, particularly of machinery and metal articles of all kinds, as well as cotton goods. Furthermore, the recent establishment of American banks at Buenos Ayres and Rio Janeiro will prove of great advantage in the development of any such trade.

Our railroads, particularly those in the South, appreciate the opportunities which



NOW THAT SHE'S ALONE
– Darling in the Des Moines *Register and Leader*



—From Cleveland Plain Dealer

Waiting for the Ferry.

lie in this direction and efforts are being made to instruct manufacturers as to the best methods by which it may be taken advantage of. The Southern Railway, for example, has established a bureau through which it is prepared to furnish information of every character with regard to South American markets, the purpose being to aid Southern business men to establish trade with South America. The information given out by this Bureau is without cost, being part of the Southern Railway's work for the development of the South. Other roads are making similar efforts which will undoubtedly bear fruit in the stimulation of commerce between the southern ports and those of South America.

How great are the opportunities which lie southward may be appreciated when it is stated that South America exchanges goods with the rest of the world, to a total annual value of more than $2,000,000,000. If we add to this trade that of Cuba, Haiti and the Dominican Republic, the annual value approximates $3,000,000,000. With the opening of the Panama Canal, and on account of the European war, practically this entire trade is thrown open to American manufacturers, if they display enough energy and enterprise to develop it. Their position at the present time is certainly preferred and is one which may never again present such an unequalled opportunity.

In addition to the efforts of the railroads to develop this trade, the Department of Commerce has organized a corps of commercial agents specially selected on account of their knowledge of South America, who will at an early date, proceed to the various Republics of that country for the purpose of determining their import requirements and how they may best be met. It will be the duty of these agents to go thoroughly into all details and examine carefully the possibilities of extending and strengthening our trade in South America.

AN UNREMUNERATIVE PASSENGER SERVICE

In the decision of the Interstate Commerce Commission covering the Eastern carriers' appeal for an increase of five per cent in their freight rates, attention is called to the fact that passenger rates, in many instances, are unremunerative and the suggestion is made that steps be taken to so readjust these rates as to provide sufficient revenue to cover the cost of this branch of the service.

While for many years the carriers have recognized the fact that passenger rates were too low, developments within recent years have greatly aggravated the situation. Not only has the public's demands for a higher class and more costly service been incessant and general, but the arbitrary action of state commissions in reducing intrastate passenger rates has brought about a condition which is well nigh intolerable and one which calls for immediate and drastic remedy.

Traffic officials recognize the fact that a no more unpopular move could be made than a readjustment upwards of passenger rates. They now have behind them, however, the moral support of the Interstate Commerce Commission as well as a number at least, of the state regulative bodies, and the present is hardly the time to hesitate in taking full advantage of the Commission's recommendations. While a favorable public sentiment is much to be desired, the public is characteristically selfish, when it comes to a matter of personal interest and the railroads cannot afford, at this juncture, to be swayed by their opinion in the readjustment of these rates. The service does not pay for itself, is a heavy drag upon the whole industry and the Commission's attitude is at least logical, when it affirms that a continued advance in freight rates can hardly be permitted until the passenger service has at least been made to bear its share of the costs. The following statement recently issued by the Bureau of Railway News and Statistics is of unusual interest in this connection:

Twenty-one years ago more than one-third of the railway mileage of the United States was carrying its passenger business at a loss. Taken in conjunction with the recent decisions of the Interstate Commerce Commission in both Eastern and Southwestern rates cases, finding present state enforced passenger fares unprofitable and ruling that the railways need not apply to interstate traffic the excessively low rates forced by state legislation, figures taken by the Bureau of Railway News and Statistics from early reports of the Commission show that at least for a quarter century the passenger traffic of the United States has either resulted in actual loss to the carriers performing the service or has failed to contribute its proper share to railway revenues.

The Commission's recent decision, therefore, is seen as the result, not of a recent development in passenger traffic but of the fact that American passenger fares never have been adequate to the expensive quality of service demanded by the American public.

For six years after its creation the Commission compiled figures showing not only the average revenue received by the railways for carrying one passenger one mile but also the average cost of performing the service. For these six years the revenue, cost and difference in cents per passenger mile are as follows:

Year.	Revenue.	Cost.	Difference.
1888	2.349	2.042	.307
1889	2.165	1.992	.172.
1890	2.167	1.917	.250
1891	2.142	1.910	.232
1892	2.126	1.939	.187
1893	2.108	1.955	.153

Taking these costs of a quarter century ago it may be seen how slight could be the profit to-day, when the average revenue has declined to 2.01 cents per passenger mile, forced upon the railways by state legislation, while all elements of cost particularly labor, fuel, equipment and terminal facilities, have risen enormously.

By 1893, in fact, when the Commission abandoned the computations, the railways in four of the ten territorial groups were shown to be carrying passengers at a loss. The deficits for these groups for the several years follow in fractions of cents per passenger miles.

Group	1890	1891	1892	1893
V	*.388	*.217	*.089	.146
VII	*.063	.093	.283	.151
VIII	.026	.176	.212	.250
IX	.153	.057	.138	.050

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* Net profit.

Thus in 1893 there was an average loss for every passenger carried by the railways of Georgia, Florida, Alabama, Mississippi, Tennessee, Kentucky, Louisiana, Arkansas, southern Missouri, Oklahoma Indian Territory, Kansas, Nebraska, western North and South Dakota, Montana, Wyoming, Colorado, eastern New Mexico and Texas. These railways, paying more to furnish the passenger service than they earned from the service operated 58,843 miles of the 169,780 for the entire country, or almost 35 per cent.

To-day American railways furnish the highest class passenger service in the world at a price as low or lower than that charged by any of the railway systems of Europe in their first class tariffs, even disregarding the much greater value of the American cent in these foreign countries. The comparative cheapness of American travel is shown more truly in the length of journeys purchasable by an average day's labor, the wage taken being that of railway employes:

	Av. wage per day	Av. Rects. First class per passenger mile	First class for day's labor
Switzerland	$0.99	*3.26c.	30.4 m.
Great Britain	0.93	*3.00c.	31.0 m.
Italy	1.15	*3.52c.	32.7 m.
France	0.87	2.12c.	41.0 m.
Belgium	0.85	2.01c.	42.1 m.
Germany	1.35	2.93c.	46.1 m.
United States	2.49	2.01c.	123.9 m.

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*Tariff rate.

One day's labor in the United States purchases thus almost three times as much travel as would the same labor traveling first class in the nearest European competitors above.

In the consideration of this general subject, it might be well to remember that in the two Minnesota decisions the Interstate Commerce Commission, some time ago, affirmed that rates between states need not be the sum of the local state rates. In the Shreveport decision the Supreme Court ruled that the Federal authority in rate making must be supreme and that where state and interstate rates conflict the former must give way. In the five per cent rate case the Commission has found passenger rates even in the densely populated Eastern States non-compensatory. Now, in the interstate passenger fares case just announced, it finds the same condition on southwestern railways.

Exhaustive statistics which the railways have spent years in working out thus have attained an important victory. Although in this case the Commission admits that the apportioning of costs in these statistics may not be absolutely accurate, the "margin of error which may be imputed to them is not sufficient to change our conclusion," and the state-made rates thus are placed in a light of direct discrimination with a higher rate found reasonable by Federal authority.

What has led the Interstate Commerce Commission to this decision is indicated by an analysis of some of its findings in the recent Eastern rate case. Four Eastern roads in 1913 showed actual deficits from passenger service while all the others displayed immensely smaller net revenues earned on the passenger than on the freight servic.

Ten roads in Central Freight Association territory were computed as having lost almost $18,000,000 in Ohio, Indiana. Illinois and Michigan alone through state reductions in passenger fares.

"The traveling public," says the Commission, "is giving expression to its demands for better service, better accommodations, and for the adoption by the carriers of all the devices that make for safety. A public that demands such a service can not reasonably object to the payment of a reasonable compensation therefor."

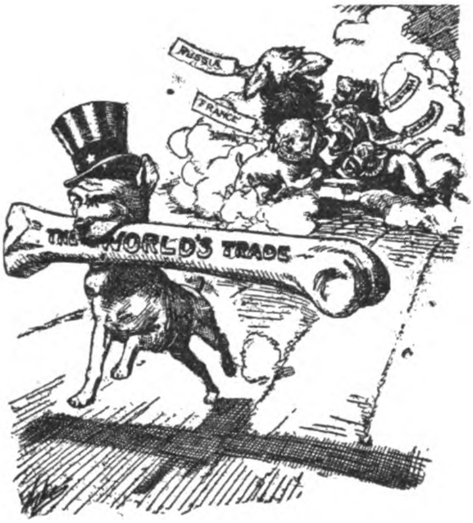
THE INFLUENCE OF THE PANAMA CANAL

The opening of the Panama Canal is another event which has suffered in comparison with the developments in Europe. At another time its opening would have created a world-wide interest in that it represents one of the greatest achievements of concentrated human effort. Its effect upon the commerce of the world will be profound and had it not been for abnormal conditions, the commercial developments connected with its first month of operation would have received the closest attention, not only by the commercial interests of the United States but by all foreign countries. Already its effect is being felt by the transcontinental roads, who in their efforts to check the shrinkage its influence has caused in their Pacific Coast freight trade traffic, are already engaged in a rate readjustment in order to compete with the new route on a more equitable basis. This early influence was to be expected, however, and while it is felt that the Panama Canal may at first cause some difficulties for American railroads, it should, in the long run, prove of general benefit.

C. H. Markham,
President of the Illinois Central.

Some of the probable benefits of the Canal are interestingly set forth in a statement recently made public by C. H. Markham, president of the Illinois Central Railroad, from which the following paragraphs are quoted:

> Anything that results in aiding development on the Pacific Coast will result in increasing the movement of commerce between the Atlantic and Pacific seaboards. It seems to me that an important factor in bringing about this development will be the direct sailing of ships carrying immigrants from Europe direct to the Pacific Coast points. This will increase the freight movement to and from that territory.
>
> The Illinois Central has not a very great interest in the transcontinental business, but being a north and south line it has a decided interest in any change in the movement of commerce that will increase shipments from Gulf ports.
>
> If frequent sailings are provided from New Orleans there ought to be a very considerable movement of tonnage to and from territory as far north as St. Louis and Louisville. However, nothing has occurred yet to indicate the extent to which ships will be provided, and we are all at sea as to what the future will bring.
>
> Regarding any possible change in freight rates from Chicago, Mr. Markham said the situation was so indefinite that a forecast could not be made.
>
> I think likely that the freight rate from Chicago and adjacent territory to New Orleans always will be as low as from Chicago to New York. I think without doubt it will be the policy of the lines serving the Middle West to go the limit in making rates which will protect industries located in that territory, and permit direct movement, all rail, as against back hauls to either the north Atlantic or Gulf ports.
>
> It has been estimated that 3,000,000 tons of merchandise go annually by rail from East to West, and about the same amount from West to East. About 500,000 tons go each way by water.
>
> The bulk of water shipments originate within a strip approximately 300 miles wide along both seaboards. Up to the present time the movement of freight to and from points located in territory tributary to New Orleans and other Gulf ports and crossing the Isthmus of Panaman or Tehuantepec has amounted to very little.
>
> A large portion of the transcontinental freight originates west of Pittsburgh, but I believe the opening of the canal will materially widen the strip from which freight will flow chiefly toward water frontage along the coasts.
>
> The extent of this strip will depend upon the spread between the rail and water rates as it will exist after the canal is handling the traffic and the transcontinental lines decide the extent to which they can afford to go in meeting the competition of vessels using the canal. There is no question that a much larger share of the class of traffic now moving will go by water than at present.



Beats Fighting! —Philadelphia Ledger.

FREIGHT RATES AND EUROPEAN WAR

One contention of railway officials has been more than vindicated by the influence of the European war upon the living expenses of this country. The familiar argument that the cost of living was dependent, to a large extent upon freight rates, has been so clearly proven to be fallacious that the political demagogue is not likely to use such argument for some time to come.

The shock of war has taught the American citizen, as never before, that an increase in the cost of living may be totally unrelated to freight rates. On the other hand, it is being forcibly brought to his attention that by denying the railways a living rate, not only does the entire transportation industry suffer, but its effect is felt by every other business enterprise, and that a restrictive policy of this kind, in the long run, must affect the prosperity, to a greater or less extent, of every American home.

If the American people could only more fully appreciate the significance of the fact that ninety-five cents of every railway dollar goes directly back to the people for wages, fuel, lumber, iron, steel and other supplies, they would be more conservative in their efforts to regulate the railways and to demand a lower rate irrespective of its effect upon the industry. As the result of a largely fancied grievance, nursed by the self-seeking politician, this regulation has grown to such an unnecessary extent as to load the back of the public with taxes for national commissions of investigation, state commissions, boards, bureaus and other regulative bodies, far beyond the real requirements of the case; and this enormous weight of largely unnecessary taxes, has been one of the important factors in the increased cost of living.

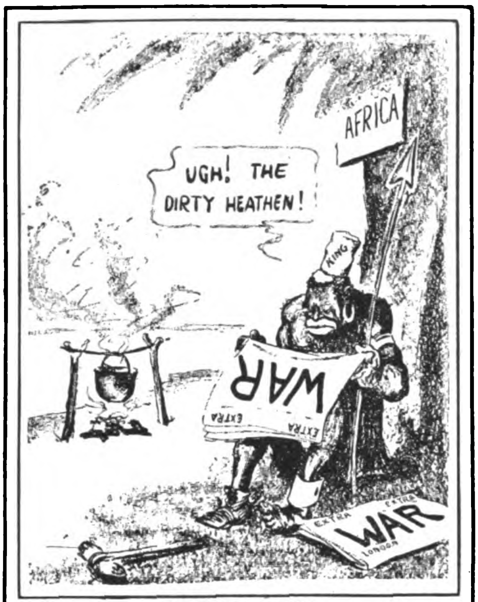
Politicians naturally cater to this sort of thing, seeing in it more power and a bigger pork barrel, while the common people, believing in the plausible argument that it offered them a panacea for all ills, have aided and abetted it. However, there are many indications of a revulsion of feeling and the heroic work performed by railroad officials during the past few years, under the most discouraging conditions, may yet bear fruit. If it does, the country will witness the resumption of a prosperity which has not been in evidence for some time past.

THE EXPERIENCE OF RAILWAY OFFICIALS IN GERMANY

The experiences of a number of prominent railroad officials who have recently returned from the European war zone, do not appear to justify the criticisms of harsh treatment which so many American travelers have indulged in upon their return from abroad.

George F. Brownell, vice-president of the Erie Railroad, who was with President Daniel Willard, of the Baltimore and Ohio, at Carlsbad, when the war broke out, is

George F. Brownell,
Vice-President of the Erie.



AS OTHERS SEE US
—Tuthill in the St. Louis Star.

among those who have recently returned.

Mr. Brownell said that Americans in Germany and Austria were treated with the greatest consideration as far as military conditions permitted. "Those who remained where they were when the war broke out and did not become panic stricken and seek to get out of the country during the period of mobilization suffered no discomforts except difficulty in getting money on letters of credit, which condition was remedied wherever it was possible to get in touch with American consuls.

"Of course," said Mr. Brownell, "it is not unlikely that those Americans who tried to get out of the country during the progress of mobilization and first excitement of the declaration of war, were subjected to hardships and inconveniences which appeared at the moment to be outrageous indignities. But it must be remembered that many tried to get out of the country and even to penetrate the zone of military operations, with French automobiles, French chauffeurs, and French licenses, which was like waving a red rag in front of a bull. Most of these people could not speak German and in the general excitement it is not surprising that some were handled severely. Then, too, many Americans were mistaken for Englishmen against whom there is a very bitter feeling in Germany.

"It is also not surprising that Americans were not able to cash their letters of credit for most of these were drawn against Paris or London banks and with Germany at war with both of these nations, the German tradespeople and bankers hesitated to cash them for the reason that it was uncertain when they could be collected, although they were admittedly good.

"Wherever it was possible to get in touch with American consuls this condition was relieved although discounts necessarily in many cases had to be given to protect the Germans against probable delay in collecting or against probable loss.

"When our party was ready to leave Carlsbad about two weeks ago and after the mobilization had been completed, we were shown every courtesy and even afforded many privileges that Germany refused to its own people. A special train was made up on which about 500 Americans left Carlsbad and over the entire trip to Holland the feeling displayed by the people of the towns through which we passed was so friendly as to give it the appearance of having been specially displayed as a demonstration of the friendly attitude of the German public toward Americans."

President Willard's experience was very similar to that of Mr. Brownell's. To quote from a short statement he made upon his arrival:

> The only inconvenience we suffered was a temporary shortage of funds. This, however, was soon overcome and all was smooth sailing. Of course, transportation facilities were not of the best, but we have no complaint to make.

Abuse of the Parcel Post.

(From the "Express Gazette.")

AS an incident of the European war and the upheaval in the American money market, fifty-seven tons of gold was sent by parcel post from the Mint in Philadelphia to the Sub-Treasury in New York. This trick of the Government to get railroad transportation for nothing is not new, for ten carloads of gold were sent by registered mail, several years ago, from San Francisco to New York. A railroad president who was accused of padding the mails, during the weighing period, on his small road in Iowa a few years ago, was indicted in court as a criminal, and we believe, was punished; but it is difficult to see any great difference between his act and this one of the Government. Sending big bags of gold by parcel post is legal, apparently; and so was the sending of tons of grain last year in Colorado, and of fruit in New Mexico; but everybody must admit that it is glaringly illegitimate.

Contemporary Opinion

Danger of Undermining Railroad Credit.

(From the Boston News Bureau.)

IT cannot be too often emphasized that the fundamental and generally unseen danger in this country is the insidious undermining of railroad credit for which the politicians in and out of Washington are more responsible than the labor unions.

One of the first measures in England on the outbreak of war was to insure the facilities of transportation by guaranteeing the railroads their previous net return and then operating them in harmony with the War Department. It didn't take a week to accomplish this in England. Yet the Interstate Commerce Commission has been considering for years the question of a trifling advance in the freight rates of some American railroads. The entire wisdom brought forth was in the minority report which showed the necessity for the increase.

When credit seeps out of a railroad property it is only a question of time when the result shows in the locomotive, the rail and the tie, and shipments are retarded and travel beomes unsafe.

The hope for a future that the Interstate Commerce Commission should have given to the railroad security holders of this country having been denied, what is there to sustain American "railroad credit in the present trying times?"

Business is based on hope, and a firm hope for the future will carry forward billions of credit over great chasms. At the present time there is a chasm yawning under the feet of the railroad men in this country.

It is more important at the present time to save the railroad situation than it is to punish railroad managers who have exercised bad judgment and have expanded when they should have contracted.

Inexcusable Delay by Interstate Commission.

(From Philadelphia "Ledger.")

WHEN through extravagance, bad management and ill fortune the Federal Government finds its treasury empty it takes prompt measures to get more money. The Interstate Commerce Commission refuses to permit the railroads to increase their revenues, although their necessities are quite as great as those of the governmental bureaus which spend money so lavishly.

On the one hand, Congress, which is directly **responsible** to the people, acts without quibble or delay. On the other hand, the bureaucratic Interstate Commerce Commission, which is responsible to nobody, postpones, shifts from one foot to the other and prepares to collect another colossal amount of useless information.

Congress meets an unlooked for emergency squarely and settles it before procrastination has multiplied the country's ills. The bureaucratic Commission apparently feels no like patriotic impulse to solve for the railroads and the entire business interests of America their financial troubles.

Congress acts while the Commission delays, and yet the problem before Congress in getting more revenue was vastly more complex than the question which now faces the Commission. If the Commission performs the work it was intended to do, it must already possess all the facts and figures needed to make a decision in the railroad rate case.

When a bureau gets snugly and comfortably settled in its easy chair, it is liable to forget the reasons for its being there.

A Desperate Necessity.

(From the Wall Street Journal.)

IT is not too much to say that an advance in railroad rates is now a desperate national necessity. Constant increase in taxation, ever advancing wages, and higher cost of everything that goes into maintenance, prove the Eastern roads should have had the increase they demanded. For reasons of politics, and after prolonged delay, they did not get it.

This is equally true of the Western roads and those in the South. But in the new set of circumstances the matter becomes one of absolute national emergency. Our railroad securities are so largely held in Europe that unless we can convince the holders there that they should be the last investment to be sold, this country will be flooded by foreign holdings, a liquidation of our debt abroad, which neither this nor any other country could stand.

Already the earning capacity of the railroads, except those of the very highest credit, has been reduced to a level unattractive to the investor. The foreign holder of securities is a student. He holds on merit, buys on merit, and sells, not on speculative information, but upon cold analysis of earning capacity. We can make him a buyer of American securities. But the Interstate Commerce Commission has already done its best to make him a seller, while it has not provided any buyers, unless it has the idea of public ownership through bankruptcy.

Every kind of wild project has been submitted to the Federal Government. It is asked to invest the taxpayer's money in a speculative position in cotton, marine stores, or a dozen other staples which should take care of themselves. But it is invited to starve out the railroads, representing the greatest single industry in the world, and incomparably the greatest taxpayer in this country, the one of all on which the prosperity of the others stands.

Relief to the railroads through an advance in passenger and freight rates is a necessity so great and urgent as to approach almost to the actual pressure of war.

Applaud the Attitude of President Wilson.

PRESIDENT WILSON'S stand with regard to the railroads of the United States as contained in his recent letter to Chairman Frank Trumbull of the Norfolk and Western Railway, and published in full in another section of this issue, has met with the universal approval of business men throughout the country, if press editorials and the published statements of men engaged in all branches of industry, may be taken as a criterion.

The Executive Committee of the Railway Business Association has issued the following statement on the stand taken by the President:

"The Railway Business Association commends the spirit in which the railway presidents recently conferred with the President of the United States upon the grave conditions confronting the railways, aggravated by the European war, and is profoundly appreciative of the appeal made by President Wilson on behalf of the railways.

"We are moved thereby to say that the logical sequence of the President's appeal is for business men to plead that the Interstate Commerce Commission may find a way to grant immediate relief in response to the petition which the Eastern railways have now filed.

"The President in his conference with the railway executives manifested earnest sympathy with them and showed familiarity with the facts as presented.

"Out of the war has arisen an emergency affecting the railways which has no parallel and which demands extraordinary measures. Reports of earnings and expenses for the year ending June 30, 1914, which were not yet available when the Commission decided the five per cent freight rate case, have now been laid before the Commission and show a serious decline of operating income in face of increased property investment.

"The war has inflicted and is inflicting still further losses in gross earnings. It was evidently the Commission's expectation that current earnings would be sufficient to tide the roads over until the new sources of revenue should materialize into money.

"The war has put an end to that hope. The roads are now vigorously taking steps to follow the recommendations of the Commission as to passenger rates unremunerative freight rates, free service and other matters.

"Outbreak of hostilities caused the wholesale return to this country of American railway securties held abroad. Prices slumped violently. This sacrifice was temporarily suspended by the closing of the European and American stock exchanges.

"We would respectfully urge upon the Congress that in the conisderation of railway mail pay the recommendation of the Congressional Joint Committee points a way whereby the railway may be dealt with in a spirit of greater liberality than is provided in the House bill now under consideration in the Senate.

This is surely a time when the Government should be actuated by a desire to pay adequately for an important public service."

An Unfortunate Delay.

(From the New York Times Annalist.)

IT is unfortunate that the Interstate Commerce Commission felt it necessary to put over until October 19 the hearing of the renewed application of the railroads for an increase in freight rates. The petition of railroads for a rehearing was granted on Saturday, and a delay of a week or ten days would appear to be sufficient for the taking of testimony in a case of this kind, which is merely the continuation of a long pending case in which a modified decision is sought on the basis of a new set of facts which were not before the Commission when it rendered its recent decision. The Commission was very wise in limiting the testimony in the reopened case to the new facts. That should avoid any prolonged discussion. The presentation of the "new evidence" will be a relatively simple matter.

The effects of the war have increased the railroads' need of an increase in freight rates, and they have also increased the interest of the country at large in a favorable response to the appeal of the roads. There can be no doubt that an advance in rates at this time would increase the confidence of European investors in our securities, and that in turn would lessen the desire of those investors to dispose of their holdings in American railway securities. Strengthening the position of our railroads and proceeding promptly with the settlement of our obligations to Europe would probably have the effect of limiting the foreign selling of our stocks when trading is resumed here to the selling prompted by the necessities of the holders unaugmented by selling due to misgivings regarding the safety of investments in American securities.

What Railway Employes Would Receive Under Government Ownership.

(From the Railway Employes' Journal, official organ of the Brotherhood of all Railway Employes.)

LET us have another talk, brother railroad men, about government ownership of your industry and of you—a heart-to-heart, man-to-man talk.

Let us see where we railroad workers will get off or get on when this industry of ours, out of which we draw the only living we'll ever have, quits running as a plain business proposition and begins running as a huge political machine.

Let us see what happens to government employes in the one big business the government now owns and operates—the post office business.

Incidentally, the government makes that business appear to pay a profit by making your business work for it at a loss. That loss comes out of the wage-fund that rightfully belongs to you.

Last month you read in these columns a sentence that said:

"When the postman, the railway mail clerk, the government bureau clerk, the soldier or sailor is punished or dishonorably discharged, he takes his medicine. It does not matter how great the injustice done him, there is no right of protest, no appeal. Government ownership puts you in the same fix."

That sentence was written early in August. Verification of it was not long in turning up.

In the Chicago Herald of August 21, 1914, appeared an item which said:

"Frank H. Raduenz, president of the Chicago local of the Postal Clerks' Union, was discharged from his position in the Chicago postoffice last week by special order from the Postmaster-General's office in Washington. Postmaser D. A. Campbell said last night he understood inspectors from Washington had discovered Raduenz placing circulars for other clerks in the bundles of mail sent out. The circulars asked the removal of the head of the railway mail service at Washington.

"At the office of Postmaster-General Burleson in Washington yetserday it was said a number of Chicago clerks were to be discharged for insubordination on the grounds that they sent out in the mail bundles of circulars which contained criticism of their superior officers.

"It was said the circulars were being sent to all the postal employes' organizations, urging them to take action for the dismissal of Second Assistant Postmaster-General Stewart, in charge of the railway mail service. The circulars also started a campaign for shorter hours and a revision of night work."

Draw your own conclusions, brother railroad men, from this little case of government ownership discipline. You can guess from it what would happen to you if a government bureau had the power over you a government bureau has over the postal clerks and if you offended some little Jack-in-office of a bureaucrat.

Another good way to find out what government ownership would do to you is to find out what it is actually doing to railroad workers in other countries.

Here is how government ownership Italy dealt with railroad workers who took part in a recent strike. The facts as gathered by the Railway Age Gazette from official reports are thus set forth:

"As a result of the Italian railwaymen's strike, the following measures have been adopted: Forty-eight employes of various grades have been called upon to resign; two station-masters, 16 lower employes, and 352 mechanics and firemen have been degraded; increases in salary of other persons taking part voluntarily in the strike will be postponed for periods varying from six months to two years, alternatively they will be suspended from duty for periods of from 6 to 12 days. The council of administration has decided to commend those employes who did not leave work."

And you might make a note of it right here that government ownership Italy pays its average railroad worker the munificent sum of $287 a year—seventy-nine whole cents a day!

Lately there was a general strike on the railways of South Africa, owned and operated by the government. It was the outgrowth of widespread industrial disturbances.

Whatever the rights and wrongs of the railroad strike, just take a glance at how it ended:

"1. Marital law was proclaimed in the strike centers.

"2. Troops parolled yards and stations and guarded all trains, making many arrests.

"3. The strike was crushed within a few days and the strikers unconditionally surrendered.

"4. Nine strike leaders, including the secretary of the railroad workers' organization, were deporteed as 'enemies of South Africa.'"

So much for the effect of government ownership upon your organizations and your right to organize. These are merely current examples; there are plenty of others like them to be found in the recent history of practically every government ownership country.

Now let us have a look into what government ownership does to the railroad industry and to the public it serves.

Ex-President Roosevelt is much looked up to by many Americans as the foremost citizen of his period in all things that pertain to national progress. Recently, writing home to a magazine, the Outlook, while he was traveling in South America, he said:

"When the time came for us to leave Chile, we went southward on the railway to Puerto Varas. Incidentally I may remark that the railways in Chile are owned by the state, and that the men I met who were best informed and most trustworthy, expressed great regret that they had not been kept in private hands. These men stated that there was always a deficit in the management of the railways, and that they were a burden on the government and unprofitable to the citizens generally."

In government ownership Belgium the state roads are bankrupt, according to tthe latest official figures. There are five little private Belgian companies. They spent in one recent year $41 for operating expenses out of every $100 of revenue, while the government roads spent $66—and the average Belgian railway worker gets $256 a year—seventy whole cents a day!

Then look at government ownership Germany. A worldwide authority on railroad management, Prof. Walther Lotz—himself a German—has just published a book in which he declares the German system of government ownership to be an oppressive monopoly and a political mistake.

Professor Lotz goes on to say.

"Nationalization is not by any means a solution of the monopoly trouble. Monopoly remains monopoly even if it is managed by officials. True, the state is claimed by nationalization enthusiasts to be a higher and unerring entity. But in reality the state is only the national organ of erring men, who are influenced by their virtues, their faults, their interests and their passions. And these influences are all brought to bear on railroad management quite as much when the state does the managing as when private persons do it. Indeed, in countries governed on party principles, privately owned railroads are often more bearable than state-owned railroads, as state-owned railroads are exploited as much as possible for their own advantage by changing parties. * * * * This is a reason against nationalizing the railroads in the United States."

Size it all up for yourselves, brother railroad men. These few examples are enough. They show you how badly government ownership serves the public and how much worse it serves the railroad worker.

Yet government ownership is being steadily crowded upon the American railroads and upon you.

They are rabid about it sometimes, these government ownershippers. Here is what one of them—a very powerful one—publisheed recently:

"The heart of one railroad is the heart of all railroads, just as the heart of one rattlesnake is the heart of all rattlesnakes. * * * * The railroad impulse is as black and bad as was the railroad impulse of a third of a century ago.'

You railroad workers know how wickedly untrue and unjust this statement is. But it is exactly the brand of evil that is being wrought against your industry and you. This kind of talk is resounding from the forums where demagogues rant and shout and abuse your industry in their scramble for place and power—it is what they are making the people believe about your industry and you.

The purpose of the government ownershippers—some working directly and others indirectly by "regulation" and by harassing legislation—is to wreck your industry first and then buy it cheap—with you thrown in.

Much the government ownershippers care about you or your chance to live like white men!

They will let you have, maybe, as much of a wage as is paid to the average railroad worker in Italy—seventy whole cents a day!

Perhaps, if you are polite and always tip your hat and if you snuggle up to the right set of politicians, they'll let you have the Belgian wage—seventy-nine whole cents a day!

And you'd better note that the Belgian and Italian wage is for 365 days' work a year.

Should you dare to form an organization and invoke its strength against some tyrannical Fourth

Deputy Assistant Commissioner of Railroads, your president will get what Postal Clerk Raduenz got.

O, if there should be a strike, your leaders might be spared terms in Leavenworth penitentiary and simply deported—that is, exiled for ever from their own free country—as "enemies of the United States."

No wonder most of you are against government ownership—the wonder is that any of you are for it.

But "being" against it won't save you from it. You'll have to be DOING against it or you'll get it—and with it the coolie's wage, the slave's shackled limbs and gagged mouth.

Government Ownership as Viewed by a Government Railway Official.

PRESIDENT RIPLEY, of the Atchison, Topeka and Santa Fe, has recently received an interesting communication from an Englishman who has had actual experience as an official in the employ of a Government railroad in one of the British possessions. The following is the letter with only such slight modifications as have been necessary in order to avoid revealing the writer's identity, thus avoiding embarrassment for him:

"For the past seven years I have held the post of assistant to the general manager of a small colonial railway, owned and operated by the Government, and have also been employed in the United States for three years; in addition to this American methods were the model far more than European ones in the operation of the line. Having always followed railway affairs in the principal countries with great interest it appears that the bait which attracts the public in all lands to advocate government ownership is the hope that the railway service will be run at a loss to the Government, or, in other words, so that those using the railway may do so at the expense of those who do not.

The public were continually making the following demands:

(1) That all rates, both freight and passenger, should be reduced to the figure considered reasonable by themselves.

(2) That all services should be much improved in every way, not only as to class of accommodation required but also to the extent of removing necessary regulations, such as demurrage, storage charges on unconsigned or uncollected goods, insurance charges for valuable goods and most other necessary regulations for the protection of the interests of the concern.

(3) That all rates should be on the ton-mile basis for all articles when this would be favorable to a particular district when compared with the existing rates to some other district, but vice versa when more advantageous; this quite irrespective of the physical characteristics of two sections of the line, etc.

(4) Perpetual agitation for branch lines into unremunerative districts, very largely for the reason that some other parish had a branch line—the line of argument advanced as regards navy dockyards in the United States.

These same arguments are further used by the politicians for their own purposes, to which they add the cry that all railway employes are underpaid.

Add to this the opinion held by most government employes that the Government's dollar bill is only worth about eighty cents in equivalent work, and that they are of inalienable right entitled to many concessions which they would not expect with a first-class company, and it is evident that that much abused ideal "efficiency" becomes unattainable under such conditions.

I quite admit that the concern of which I have had experience is microscopic in magnitude compared with any large company, but the point of view of mankind as to desiring something at the other fellow's expense is universal.

Aside from the impossibility of comparing railway operations in one country with those in another excepting on very general lines it always has seemed to me that no comparisons of rates could be made unless the differences in the value of money in the corresponding countries was also taken into account. Taking passenger fares, for example, the following rough tabulation will illustrate the point:

Country	Av. rate per mile. Cents	Av. laborer's wage per day	Miles possible to travel for one day's wage. Miles
United States ...	2	$1.50	75
England	2 (3rd cl.)	.75	37.5
Germany	1 (4th cl.)	.50	50
British India	0.5 (3rd cl.)	.08	16

The usual statement by "popular" writers and many others is that the rate in England and the United States is the same, whereas traveling for a laborer is twice as cheap in the United States as in England. I do not advance these figures as exact, but only to illustrate the necessity of a common unit of comparison.

To Prosecute Trespassers.

(From the "Santa Fe Magazine.")

AT last the public conscience in the State of Illinois has been awakened to the responsibility which rests upon the governmental powers in the matter of railroad trespassing. According to a statement made by James E. Quan, chairman of the Public Utilities Commission of Illinois, trespassers on railroad tracks in Illinois will be arrested and prosecuted from now on.

With the consent of Governor Dunne the Commission will instruct municipal and railroad authorities to arrest all trespassers. It is believed when the people realize they will be fined for walking the tracks they will cease to take such dangerous cutoffs, and the common practice of track walking will be eliminated. Figures prove that more than half the people killed by the railroads in the United States are trespassers.

A general campaign will be waged to educate the public on the danger of grade crossings and to teach them to heed the railroad danger and warning signs.

It is rather a strange commentary on human nature that individuals must be penalized as a matter of self-protection, but there is a take-a-chance element in most of us that needs must be tamed either by actual injury or by the law, and the thought of a pecuniary fine or other punishment, with a certain degree of humiliation attached, is far more terrifying to the average person than the possibility of injury.

A resume of the laws existing in the different states covering this important phase of transgression will be of interest here:

In New York all persons, excepting those connected with or employed upon a railroad, are prohibited from walking upon or along its tracks, excepting where the tracks are laid across or along streets or highways.

In Wisconsin it is declared to be unlawful for any person to walk along a railway track, but no penalty is provided for violating the statute.

In Virginia persons are prohibited from being on a track within one hundred yards of an approaching train otherwise than in passing over the railway at a public or private crossing.

In Missouri it is provided that any person who is injured while walking without right on a railway track shall be deemed to have committed a trespass in any action brought by him on account of such injury, but the courts of Missouri have practically nullified this statute, and there is no specific prohibition of mere trespassing.

In Indiana any person who is unlawfully on, or is about to enter unlawfully upon, the property of a railway, shall be notified to depart by the company's agent, and, if he refuses to do so, shall be guilty of a misdemeanor and on conviction shall forfeit not less than $5 nor more than $50. This law is very defective because of the provision that notice must be given to the person before his trespassing can be punished.

In New Hampshire it is provided that "if any person shall without right enter upon or remain on any right of way, track yard, station ground, bridge, depot or other building of any railway when notice has been posted forbidding such trespassing, he may be fined not exceeding $20, and no right to enter or be upon any railroad track shall be implied from custom or use, however long continued." It is further provided that if any person shall be injured while violating this act, neither he nor his executors or administrators shall have any cause for action against the railroad company for damages arising from such injury unless the injury is occasioned by the wilful or gross negligence of the railroad or its employes.

In Maine it is provided that no railroad corporation shall be liable for the death of a person walking or being on its road contrary to the law or to its valid rules and regulations. It is further provided that whoever without right trespasses on a railway track or other property shall forfeit not less than $5 nor more than $20. Railways are required to keep the section containing this latter provision posted in a conspicuous place in every passenger station, and for neglect thereof may be fined $100.

The New Jersey law prohibits any person but an employe from walking along railroad tracks, and any person who is injured while violating this provision cannot recover damages.

Massachusetts provides that whoever without right knowingly stands or walks on a railroad track shall forfeit not less than $5 nor more than $50, and the Rhode Island law is similar.

The foregoing summarizes the provisions of all the state laws that can be found that deal with the specific subject of railway trespassing. It leaves thirty-eight states mute on this subject, and a general awakening on the part of the law enforcers throughout the country is greatly to be desired. But, even in those states where there are laws against trespassing, offenders too frequently are dismissed without punishment after the railroad special officers have gone to the trouble to arrest and prosecute them. This feature is very discouraging to railroadmen.

Governor Dunne, of Illinois, has set an excellent example, which we trust other state executives will not be slow to emulate.

Personal

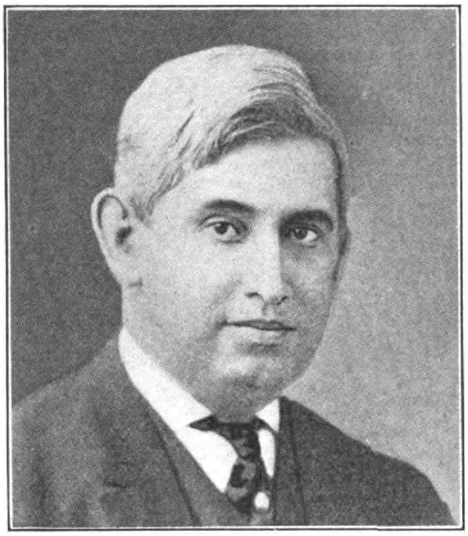
Hale Holden.

HALE HOLDEN, who has been elected president of the Chicago, Burlington and Quincy Railroad, was born August 11, 1869, in Kansas City, Mo. After receiving an education at Williams College and the Harvard Law School, he began the practice of law in Kansas City, and in 1907, became identified with the legal affairs of the Chicago, Burlington and Quincy. Mr. Holden conducted many important litigations for this railroad and his success was of such a profound character that he was appointed assistant to the president in 1910. Two years later, he was elected vice-president, which position he occupied at the time of his recent election to the presidency.

HALE HOLDEN.

Harry R. Kurrie.

HARRY R. KURRIE, who has recently been elected president of the Chicago, Indianapolis and Louisville Railway, was born in Indiana, in 1875. After graduating from the Indiana University, he began the practice of law at Rensselaer, Ind. Afterwards, on February 10, 1902, he was appointed general solicitor of the Chicago, Indianapolis and Louisville, and was

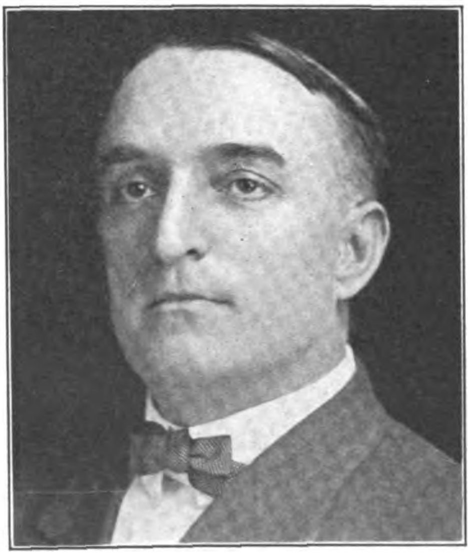


Harry R. Kubrie.

made general attorney of the same road in January, 1910, which position he held at the time of his recent election. He succeeds Mr. F. A. Delano who, as reported in a previous issue of the "Railway World" resigned to become vice-chairman of the Federal Reserve Board.

E. A. Bynum.

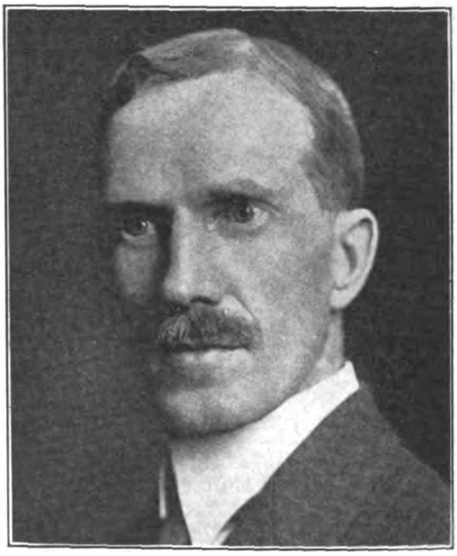
E. A. BYNUM, who has recently been appointed vice-president and general manager of the Texas City Terminal Company, began his railroad career in the service of the Baltimore and Ohio Southwestern at Louisville. In 1885, he went to the Illinois Central road at New Orleans, serving in various capacities with that road and with the Yazoo and Mississippi Valley Railroad for eight years. In 1894, he entered the freight department of the Texas and Pacific, two years later returning to the Illinois Central where he became associated with the foreign freight department in which he occupied various positions for nine years. After serving a total of seventeen years with the Illinois Central, he was appointed joint agent for the New Orleans Terminal Company, the New Orleans and Northeastern Railroad and the St. Louis and San Francisco Railroad in charge of the Chalmette Terminals. After serving three and one-half years in this capacity, he was appointed assistant general freight agent of the Mobile and Ohio Railroad and held this position at the time of his recent appointment.



E. A. Bynum.

William C. Tompkins.

BRIEF reference was made last month to the promotion of Mr. William C. Tompkins, to the position of assistant to the vice-president of the Grand Trunk Railway Company. Mr. Tompkins who entered the Grand Trunk services in 1885, has been in the continuous employ of this company during the past twenty-nine years.



W. C. Tompkins.

Frank B. Townsend.

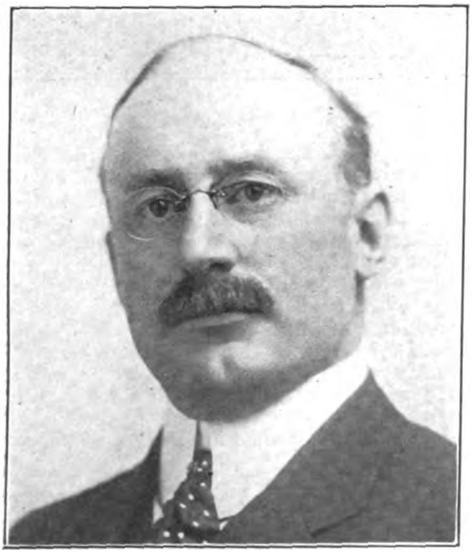
FRANK B. TOWNSEND, who has recently been appointed traffic manager of the Minneapolis and St. Louis Railroad with headquarters at Minneapolis, was born October 22, 1875, at Kirbyville, Mo. He entered railway service February, 1892, and until 1904, was in accounting and traffic departments, Iowa Central Railway, at Marshalltown, Iowa, and Peoria, Ill., with exception of one year during which time he served in United State and Cuba as Regimental Sergeant Major, 49th Iowa Infantry Volunteers, during Spanish-American war, since which he has been consecutively, July, 1904, to February, 1906, traveling freight agent, Minneapolis & St. Louis R. R. and Iowa Cen-

Frank B. Townsend.

tral Ry., at Indianapolis, Ind.; December, 1906, to December 31, 1908, commercial agent, same lines at Indianapolis, Ind.; January 1, 1909, to December 31, 1909, general agent, same lines at Chicago, Ill.; January 1, 1910, to December 31, 1911, coal freight agent, same lines, also Chicago & Alton R. R. and Toleda, St. Louis & Western R. R., at Chicago, Ill.; January 1, 1911, to July 31, 1914, assistant general freight agent, Minneapolis & St. Louis R. R., at Minneapolis, Minn.; appointed traffic manager, Minneapolis & St. Louis R. R., at Minneapolis, Minn., August 1, 1914.

R. E. Larmour.

R. E. LARMOUR, who has recently been made assistant general freight agent of the Canadian Pacific Railway Company, entered the service of the Grand Trunk Railway as clerk in the superintendent's office at Stratford, Ont., in 1884. In 1886, he was transferred to Detroit as clerk in the manager's office of the Great Eastern Fast Freight Line, and later in the same year, became clerk in the general superintendent's office of the Chicago and Grand Trunk Railway at Detroit. In 1898, he was appointed chief clerk of the local freight office at Fort William, Ont., and in 1902, agent of the Canadian Pacific Railroad at Port Arthur, Ont. In the latter year he became freight claim agent of the same road with headquarters at Vancouver, B. C., and in 1904, was transferred to Winnipeg, Man. In 1905, he was appointed city freight agent at Winnipeg, Man., which position he held until May, 1906, when he was promoted to the position of general agent, with headquarters at Fort William, Ont. From July, 1907, until July, 1914, he was division freight agent at various localities including Nelson, B. C., Winnipeg, Man., and Vancouver, B. C. It was while acting in this position at Vancouver that he was appointed general freight agent as above recorded.

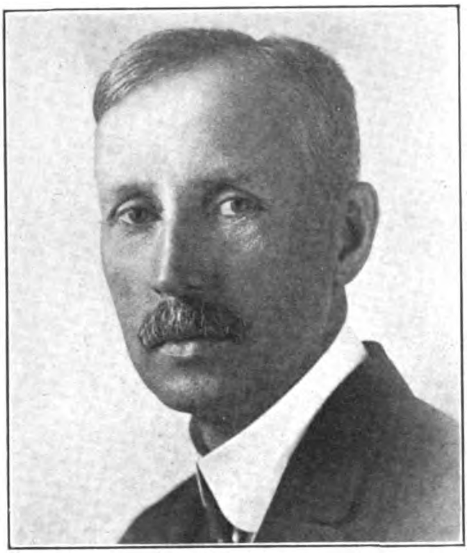


R. E. Larmour.

Frank Scott,
Who as Recorded in Last Month's Issue Has Been Elected Vice-President and Treasurer of the Grand Trunk Railway.

David Crombie.

DAVID CROMBIE, who has recently been appointed superintendent of transportation of the Eastern lines of the Canadian Northern, with headquarters at Toronto, Ont., was born in 1864, at Hamilton, Ont., and was educated in the public schools. He began railway work in 1882 with the Grand Trunk, and previous to 1890 was operator, agent, and train despatcher on that road. He then served as train despatcher and car service agent on the Flint & Pere Marquette at Saginaw, Mich., until 1900, when he became superintendent of transportation at Detroit of its successor the Pere Marquette. From 1903, to 1907, he was out of railway service, and in the latter year went to the Grand Trunk as master of transportation. Three years later he

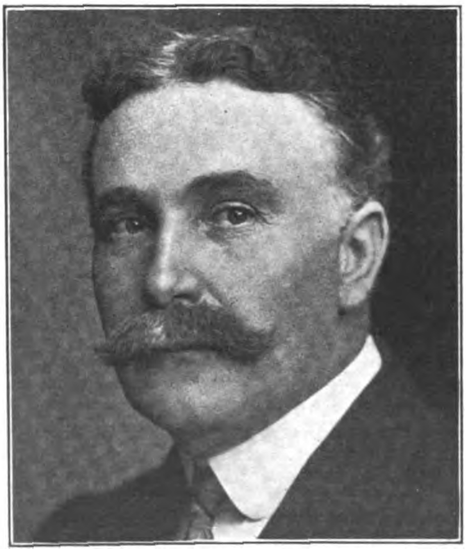


David Crombie.

was appointed assistant to general transportation manager, and in 1912, was made assistant to vice-president, remaining in that position until January, 1913, when he was made general superintendent of transportation of the same road. In August of the same year, he returned to the service of the Pere Marquette as inspector of transportation at Detroit, and in May, 1914, was appointed inspector of transportation of the Canadian Northern, which position he held at the time of his recent appointment.

Rutledge Smith.

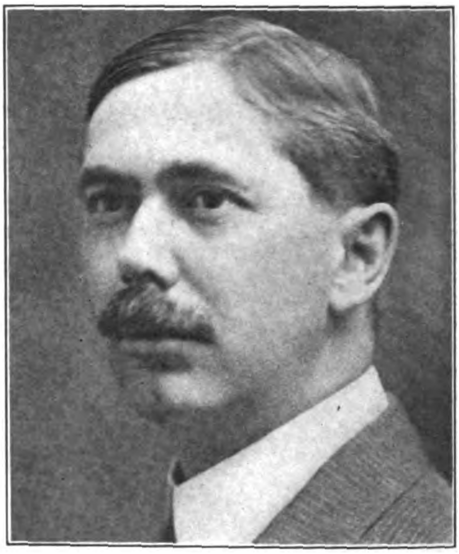
RUTLEDGE SMITH, who has recently been appointed superintendent of the Tennessee Central Railroad Company, with headquarters at Nashville, Tenn., was born on August 1, 1870, at Cookville, Tenn. Before engaging in railway work, Mr. Smith was engaged in private enterprises of various kinds including the establishment in 1887 and the development of the Cookville press, of which he has been publisher and owner ever since. He has also been manager of the Southern Press Syndicate, chairman of the Tennessee Press Association, cashier and president of the People's Bank of Cookville, assistant superintendent of public instruction of Tennessee and connected in various official capacities in the capitol at Washington City. He entered railway service on March 6, 1911, as industrial agent for the Tennessee Central Railroad and on March 1, 1913, was appointed general agent for the receivers and occupied this position when recently appointed superintendent. He still retains, however, his position as general agent.



Rutledge Smith.

C. B. Williams.

C. B. WILLIAMS, who on September 1st, was appointed purchasing agent of the Central Railroad of New Jersey with office at New York City, was born at Beech Creek, Pa., March 22, 1873. He entered railway service in 1890, in the employ of the Beech Creek Railway, now the Pennsylvania division of the New York Central and Hudson River. In 1893, he was transferred to the general offices of the Central Railroad of Pennsylvania as stenographer and chief clerk to the general superintendent, which position he held until February 1, 1900, when he became chief clerk to the superintendent of motive power of the Central Railroad of New Jersey with headquarters at Jersey City. On September 1, 1908, he was appointed general storekeeper with office at Elizabethport, N. J., which position he held at the time of his recent promotion to that of purchasing agent.



C. B. Williams.

Truman P. Gaylord.

TRUMAN P. GAYLORD, who has been elected acting vice-president of the Westinghouse Electric and Manufacturing Company, was born at Shelby, Mich., and attended preparatory school at Allen Academy, Chicago. He subsequently attended the University of Michigan, and in 1895 received the degree of Electric Engineer from the Armour Institute of Technology, Chicago.

Mr. Gaylord was engineer of underground construction during the World's Fair at Chicago, 1892-3.

At the close of the Fair he became assistant professor of Electrical Engineering in the Armour Institute, which position he retained until 1898, when he became associated with the Commonwealth Edison Company, of Chicago, as electrical engineer.

In July, 1899, he entered the employ of the Westinghouse Electric & Mfg. Company as a salesman, following this line of work until 1902, at which time he was appointed district manager of the Electric Company in Chicago, which position he held until the time of his election as acting vice-president.

Mr. Gaylord is a member of the American Institute of Electrical Engineers, the National Electric Light Association, and is closely identified with a number of other engineering societies.

Henry D. Shute.

HENRY D. SHUTE.

HENRY D. SHUTE, who has recently been elected treasurer of the Westinghouse Electric and Manufacturing Company, was born at Somerville, Mass. He attended high school in Boston and graduated from Massachusetts Institute of Technology in 1892, with the degree of Bachelor of Science in Electrical Engineering. Following his graduation he spent a year in Germany at the School of Mines, Clausthal and also in Dresden.

In 1893, he entered the works of the Westinghouse Electric Company at Pittsburgh, as an apprentice and spent his first two years in the testing department, following which he was engaged for a considerable time in erection and laboratory work under the direction of Messrs. Chas. F. Scott and Lewis B. Stillwell, and later as assistant foreman.

He entered the Engineering Department in 1897, and one year later was transferred to the Commercial Department. In 1901 he was appointed the head of the Alternating Current Division thereof. Two years later he was promoted to the position of assistant to Vice-President L. A. Osborne, in which position he was particularly active in the development of the heavy electric traction and single-phase railway work.

In 1910, Mr. Shute succeeded Mr. Walter McFarland as acting vice-president of the company, which position he held until his election as treasurer of the company.

Mr. Shute is a member of the American Institute of Electrical Engineers, the National Electric Light Association, Engineers' Club of New York, is a director of the Pittsburgh Chamber of Commerce and is closely identified with a number of other technical and social organizations.

Obituary

Darius Miller.

DARIUS MILLER, president of the Burlington road, died on August 23rd at Glacier Park, Montana, following an operation for appendicitis. He was born in Princeton, Illinois, on April 3rd, 1859, and is survived by his wife, Mrs. Sue Brown Miller, and his mother, Mrs. John S. Miller. His entire life was spent in railroad service, beginning as a stenographer in the offices of the Michigan Central in Chicago in 1877, and ending as the president of one of the greatest of our railroads and a power in the business organization of the country.

The intermediate steps in his rise illustrate the ability and ambition with which he was endowed. From the position of chief clerk to general manager of the Memphis & Little Rock road he was in 1883 made general freight and passenger agent of the same line, and subsequently went with the St. Louis, Arkansas & Texas Railway in the same capacity. His first "big job" was that of traffic manager of the Queen & Crescent Route, which he reached in 1890, at the age of 31 years. After holding that place for two years and one-half he became traffic manager for the Missouri, Kansas & Texas Railway, and later from 1896 to 1898 was vice-president of that road. During that period his work attracted the attention of Mr. James J. Hill, and in November, 1898, he was called to be second vice-president of the Great Northern Railway, where he remained for three years, until the Burlington was purchased jointly by the Great Northern and Northern Pacific, when he was made first vice-president of that road, in charge of traffic, which position he retained until his election as president, in January, 1910.

No man can look back on his business career

DARIUS MILLER.

with more pride and less regret than could Mr. Miller. Every act was taken with keen regard to the rights of his associates and his duty as a citizen. It is seldom that a man leaves so many friends. The high honors and preferment that came to him later in life served only to make him more kindly and considerate; even when the press of affairs was strongest, his door was always open to the friend in need of help or advice.

Some of the peculiarities of his career were the entire lack of ostentation in his methods of arriving at results, his amazing ability to inspire his subordinates to their best efforts and the great regard in which his judgment was held by all who knew him well.

Luther S. Anderson, former treasurer and purchasing agent of the Union Pacific R. R., died September 8th, at Quincy, Mass.

Edward P. Amory, secretary of the Western Railroad Association, at Chicago, was found murdered in his office in Chicago on August 12th.

Frank Barr, formerly vice-president and general manager of the Boston & Maine, died recently at Winchester, Mass., at the age of 62. Mr. Barr was born at Nashua, N. H., and began railway work on March 1, 1869, as freight clerk and telegraph operator on the Worcester & Nashua, now a part of the Boston & Maine. From June, 1873, to November, 1892, he was general agent of the same road, and in November, 1892, was appointed superintendent of the Worcester, Nashua & Portland division of the Boston & Maine, at Nashua, N. H. He was promoted to assistant general manager in December, 1896, remaining in that position until July, 1903, when he was elected third vice-president and general manager of the same road, and in July, 1912, Mr. Barr was retired under the pension rules of the company.

Isaac Duell Bartin, formerly from 1881 to 1892, general superintendent of the Long Island, died on August 21st, at his home in Flushing, N. Y., at the age of eighty. He began railway work in 1852, as a station agent on the New York & Harlem, now a part of the New York Central and Hudson River, and was then consecutively freight conductor, passenger conductor, general freight agent and assistant superintendent of the same road. He was then superintendent of the Long Island, and subsequently became superintendent of the United States Rolling Stock Company. He then served consecutively as general superintendent of the Atlantic & Great Western, superintendent of the North Shore & Central of Long Island, superintendent of construction of the Manhattan Beach Railroad, general superintendent of the Indiana, Bloomington & Western, and general superintendent of the Manhattan Beach Railroad. On January 1, 1881, he was appointed general superintendent of the Long Island, remaining in that position until January, 1892, and then was general superintendent of the New York & New England. Mr. Bartin was general superintendent of the Brooklyn Elevated Railroad from February, 1894 to 1900, and then returned from active service.

James Thomas Byrne, until recently vice-president and superintendent of the Texas & Gulf, with office at Longview, Tex., died on August 7th, at Temple, Tex. He was born on February 26, 1865, and received a common school education. He began railway work on August 1, 1880, as an axman on an engineering corps of the Chicago & North Western. He was then consecutively laborer, section foreman, and steel gang foreman on the same road, and brakeman, fireman, conductor and telegraph operator on the Missouri Pacific and the St. Louis, Iron Mountain & Southern. He then served as telegraph operator on various roads until his appointment in November, 1887, as trainmaster's clerk on the Gulf, Colorado & Santa Fe. He was then consecutively train despatcher, chief train despatcher, trainmaster and assistant trainmaster on the same road, until August, 1908, when he was elected vice-president and superintendent of the Texas & Gulf.

William Henry Chambers, controller of the Florida East Coast, with office at St. Augustine, Fla., died recently in London, Eng. Mr. Chambers was born on September 25, 1852, at Dublin, Ireland, and began railway work in 1871, as a clerk in the freight department of the London & North Western, and afterwards was assistant ticket agent at Dublin of the same road. Previous to 1887, he was claim clerk of the Savannah, Florida & Western, now a part of the Atlantic Coast Line, at Jacksonville, Fla. He was subsequently, for about a year, auditor of the St. Augustine & Palatka, now a part of the Florida East Coast, and from 1888, to 1892, was chief clerk and cashier of the Jacksonville, St. Augustine & Halifax River. He was then to January, 1901, auditor, and since that time was controller of the same road and its successor, the Florida East Coast.

William E. Harwig, formerly from 1902 to 1912 supervisor of bridges and buildings on the Lehigh Valley, died on August 24th, at his home in

Phillipsburg, N. J. Mr. Harwig entered the service of the Lehigh Valley in 1878, and about two years ago left that company to become supervisor of bridges and buildings on the Lehigh & New England.

William B. Jones, former superintendent of the Chicago, Indianapolis & Louisville Railway, died recently at Lafayette, Ind.

Jacob C. Miller, formerly master mechanic of the Eastern district of the Chicago, Milwaukee & St. Paul, died suddenly on July 25th, at his summer camp on Tomahawk Lake, Minocqua, Wis., from apoplexy, aged 61 year. He retired from active railway service February 1, 1910, since which time he had been living at Maywood, Ill.

Joseph Gladding Panghorn, special representative of the Baltimore & Ohio R. R., and chairman of the company's general safety committee, died in Baltimore, August 15th. Major Pangborn was 70 years old. He was born at Albany, N. Y., April 9, 1844. At the outbreak of the Civil War, Major Pangborn, while attending the public schools of his native city, enlisted in the Forty-fourth New York Volunteer infantry as a drummer boy and served throughout the war with distinction. Toward the close of the war Major Pangborn was transferred to the cavalry division of the army and was mustered out of service at San Antonio, Texas. He was for some time in newspaper work. He resigned as editor of the Kansas City "Times" to enter the employ of the Atchison, Topeka & Santa Fe Ry., and was active in securing the right of way through the Grand canyon of the Colorado. He left the Santa Fe to go with the Baltimore & Ohio R. R., in May, 1880, as general advertising agent. He continued this work as assistant general passenger agent. For a while Major Pangborn was out of railroad work and was engaged in the advertising business with a Baltimore company, which manufactured a patent remedy. He next organized a syndicate and published a newspaper supplement for Sunday papers, having been the originator of the Sunday magazine section of the newspapers. Returning to the Baltimore & Ohio, Major Pangborn gathered the historical collection of old railroad engines, cars and appliances in their original form and reproductions and was in charge of the exhibit made at the World's Fair in Chicago, in 1893. At the close of the World's Fair the exhibit was loaned to the Field museum, and Major Pangborn started on a tour of the world as the director of the commission of the World's Rail Way. At the close of the St. Louis exposition, where he had charge of the exhibit of the Baltimore & Ohio, Major Pangborn became special representative of President Oscar G. Murray. He continued in his position under President Willard, and several months ago the general safety committee was put in his charge as chairman. Aside from his railroad activities and close identity with the affairs of his city, Major Pangborn possessed a human side of his character which made him popular with all classes. His favorite relaxation from business was that of helping deserving and ambitious young men and boys to succeed. The career of Major Pangborn as a soldier, journalist, railroad official .author, globe trotter, friend of royalty, welfare worker and man of affairs was tinged with all of the romance of fiction, and few Americans have had more varied experience crowded into life. Among other books by Major Pangborn were: "Which—The Cross or the Pound," a study of the customs of the people of India; "The History of the World's Rail Way," "Sidelights on the World's Systems of Railways," and numerous articles about his travels throughout the world.

D. M. Philbin, formerly general superintendent of the Lake District of the Great Northern and president of the Lake Superior Terminal & Transfer Railway, died in Duluth, Minn., August 6th, aged 57 years. Mr. Philbin had been in railway service since 1874. From 1890 to 1893, he was superintendent of the Duluth, South Shore & Atlantic and the following three years was general manager of the Duluth, Missabe & Northern. He was then general superintendent of the Duluth & Winnipeg until June, 1898, when he became second vice-president of the Eastern Railway of Minnesota, of which road he also was superintendent from June, 1898, to April, 1903. On the latter date he was appointed assistant general superintendent of the Great Northern and in 1906 he became general superintendent of the Lake District, which position he resigned December 31, 1913, on account of ill health.

John Player, formerly superintendent of machinery of the Atchison, Topeka & Santa Fe, died at Chicago on August 14, aged 67 years. Mr. Player began railway work in June, 1873, and until September, 1887, was with the Central Iowa consecutively as machinist, general foreman of shops, master mechanic and also in charge of the car department. He then became superintendent of motive power of the Wisconsin Central, leaving that road in June, 1890, to go to the Atchison, Topeka & Santa Fe as superintendent of machinery, which position he held until January, 1902, when he was appointed consulting superintendent of motive power. In June of that year he retired from active railway service on account of ill health.

Paul P. Rainer, superintendent of the joint rate inspection bureau, with headquarters at Chicago, died at Brockville, Ont., on September 8th.

Francis B. Sears, formerly vice-president and director of the Chattahoochee Valley, died on August 26th, at his summer home in Weston, Mass., at the age of 65.

Richard F. Stevens, formerly secretary and treasurer of the Camden & Amboy, now a part of the Pennsylvania Railroad, died recently at his home in South Orange, N. J., at the age of 82.

Daniel E. Sullivan, formerly master mechanic of the Union Pacific at Cheyenne, Wyo., died at Ogden, Utah, on August 20th, aged 60 years. He was employed by the Union Pacific for 34 years, retiring July 1st last, on account of illness.

William Tinkham, formerly president of the Providence & Springfield, now a part of the New York, New Haven & Hartford, died on August 20th, at Providence, R. I., at the age of 92.

Report of the Joint Congressional Committee on Railway Mail Pay

Editorial Note:—The following paragraphs constitute an abstract of the report submitted to Congress on August 31st, by the Joint Congressional Committee on Railway Mail Pay. After an exhaustive investigation, this Committee finds that the rate of pay for carrying the mails at the present time is wholly inadequate and that immediate steps should be taken to properly compensate the carriers for this service.

IN its final report the Joint Congressional Committee on Railway Mail Pay, recommends enactment of a bill which will increase the annual mail compensation of the railroads about $3,000,000 as compared with the compensation carried in the appropriation bill for the present fiscal year. The report recommends a space basis plan worked out by the Committee.

The Joint Committee expresses the opinion that the railroads should receive for mail transportation a rate that will yield them a car-mile revenue approximately the same as received from passenger transportation, because mail service is coincident with passenger service in speed, regularity, frequency and safety, and, therefore the cost of mail service is approximately the same per car-mile as the cost of passenger service. The rates recommended by the Committee will yield an average of 24.22 cents per 60-foot car mile, while the average return from passenger traffic is slightly over 26 cents per car mile. The proposed rates are as follows:

	Line charge per mile	Terminal charge per round trip
60 ft. R. P. O. or storage car	$0.21	$8.50
30 ft. apartment car	.11	5.50
15 ft. apartment car	.06	4.00
Closed Pouch		
7 ft.	.03	1.00
3 ft.	.015	.50

The bill provides that after the new plan has been in force two years, either the postmaster general or railroads representing not less than 25 per cent of the total mail-carrying mileage, may have the justness and reasonableness of the rates tested in an investigation before the Interstate Commerce Commission.

The report says that express and mail services performed by the railroads are so different in many respects, and reliable data regarding the two services are so incomplete, that no satisfactory comparison can be made. The passenger traffic, rather than express, is made the gauge of mail compensation. It is assumed that passenger rates are not too high as they have stood the tests of legislatures, railroad commissions and courts.

In a letter submitting the report to the Committee, the chairman, Hon. Jonathan Bourne, Jr., makes caustic comments upon what he denominates the "vacillating attitude" of the Post Office Department on this subject. He calls attention to the fact that in 1911, Postmaster General Hitchcock submitted a plan for railway mail pay and recommended it as scientific and businesslike and strongly urged its immediate enactment; that this plan was modified in important particulars in January, 1912, that an entirely different plan was submitted and recommended for enactment by Postmaster General Burleson in January, 1914, and that the Department had finally given its approval to a fourth plan which had been submitted to the House.

Mr. Bourne states that delay in completing the work and submitting the report of the Committee has been due in large part to the inadequacy of the departmental data regarding railway mail problems and also to its vacillating policy. He says:

> "While I recognized the desirability of an expeditious conclusion to our work, I believed it more important that we should do our work thoroughly than that we should conclude it quickly. I should regret extremely and be deeply humiliated if our investigation had resulted, as did that of the Post Office Department, in our changing our attitude three times and advocating four radically different measures. We should certainly forfeit all claim to the confidence of Congress if we presented such a record of vacillation as did the Department. If, in our anxiety to be expeditious, we had repudiated three plans we had evolved, upon what theory could we expect Congress to believe that we would for any considerable length of time, continue to advocate any new plan we might recommend?"

In the body of the report there are similar criticisms of the Department with citations of inconsistent statistics submitted by the Department, the most important of which is the quotation of estimates of overpay of the railroads varying from $10,531,792 down to $221,832. Quotations are made from reports of previous investigations to show that Departmental statistics have been found unreliable in the past.

The bill submitted by the Joint Congressional Committee differs from all the bills recommended by the Department. The report condemns what it calls "greed for power," cites instances of abuse of such power as in the order of the Department which sent some magazines by freight while rival magazines were transported by mail, and after quoting from one of the Department's recommended bills which gave the Postmaster General power to fix the mail pay rates on ninety per cent of the weight of mail, says:

> "Unless confronted by the record of its recommendations, we would be loath to believe that any administrative Department could presume to ask such a delegation of power from an intelligent, self-respecting, legislative body imbued with a fair appreciation of its own functions.
>
> "In view of the evidence, which is submitted on pages 111-117 of this report, showing the inability of the Department to procure

and present reliable statistics regarding its own operations, it is difficult to conceive how the Department could imagine itself competent to make an apportionment of expenses as among passengers, express and mail."

All members of the Committee join in the report so far as it relates to findings of fact and construction of the bill, but Senators Bankhead and Weeks and Congressmen Lloyd and Tuttle dissent from the chairman's criticisms of the Post Office Department.

The report closes with an itemized account of the expenditures of the Committee showing that out of an appropriation of $25,000 it expended $6,560. Two members of the Committee, former Senators Bourne and Richardson, whose terms expired in March, 1913, have served since that time without compensation and paid their own expenses.

Government Ownership of Railways

By LOGAN G. McPHERSON

Lecturer on Transportation, Johns Hopkins University.

POLITICAL government originally had its basis in combination for offense and defence. It is not a direct instrument in the production of the wealth by which it is maintained, but collects taxes for its maintenance. Although one government and another at one time and another have engaged directly to a greater or lesser extent in the processes of industry and commerce, a prime distinction between the political activities and the economic activities is that the former are not engaged in the production of wealth, while the latter are.

The mechanism of industry and commerce, money, instruments of exchange, banks, bank deposits, deeds, leases, the contractual relations between employer and employee, landlord and tenant, are the product of an evolution that has been subject to limitations of a different nature and in a measure apart from those that have affected governmental development. The underlying effort of all industry and commerce is to make "two blades of grass grow where but one grew before," or at least to see that "a new dollar is returned for the dollar that is expended." The political government has been under no necessity of making its activity immediately productive. To it, making both ends meet means no more than the levying of taxes sufficient to meet the expenditures. Many governmental organizations having the taxing power, including even some of the national governments, in recent years have seriously had to consider whether the economic sources of taxation could stand the further strain necessary to provide means for desired expenditure. In many cases projects have had to be abandoned.

The science of political government has been the development of many centuries; the science of economics, which deals with the production and distribution of wealth, is little more than one hundred years old. The first book that deserves to be considered as a scientific treatise on political economy was published in the same year that the United Colonies declared their independence of Great Britain. Agriculture had been the chief industry of nearly all nations; the use of coal had hardly begun; there was but little organization of manufacture, which was virtually all the product of handicraft.

The present Constitution of the United States was adopted, the government under which we now live was established, before that use of steam which is the basis of our industrial and economic status. It was another half century before there came into anything like general use the art of double-entry bookkeeping, the development of which has alone made it possible to ascertain with definiteness whether a dollar expended brings a dollar or more in return.

Now this is an important fact, the underlying fact in any consideration of individual wealth, of partnership wealth, of corporate wealth, of national wealth. If the individual spends more than his income he suffers material loss; continuance in this course will make him a bankrupt and finally a pauper. If a firm or a corporation is able to produce year after year only a loss instead of a profit, a deficit instead of a surplus, it must ultimately become bankrupt and go out of existence. This means that its capital has been dissipated, and capital is the surplus of past production which is needed that there may be future production. It is likewise with the nation. If the total of the production of a people does not exceed the total expenditure, that people will stagnate and ultimately the nation will decay.

This leads to the perception that not only must every dollar expended bring a dollar or more in return, but that all of that return must not be immediately consumed. Part of it must be utilized in the provision of the means for further production; that is, part of it must be utilized as capital.

Now it will hardly be denied that the mainspring of that activity which has led to advance in the political government and the mainspring of that activity which has led to advance in the economic status mainly have been set in action by selfishness. The feudal barons and their followers fought to protect themselves and to extend their sway. They were subdued and welded into nations by the conquerors who fought for power. After power was attained the conqueror sometimes continued to be a despoiler, but often he became an upbuilder. Even Napoleon said that there could not be lasting power without justice. Even our revolutionary heroes were not entirely altruistic in fighting to achieve the political independence of this nation. They were fighting for the political freedom which would give them relief from governmental exaction.

The endeavor to obtain from each dollar expended more than a dollar in return was originally prompted by the desire for gain, the desire for gain on the part of the individual. But as monarch after monarch after attaining power has given proof of his desire to bring about improvement in the lot of the people, so also have merchant and manufacturer after success in the struggle for economic independence given much of their effort to bettering the conditions of their fellowmen.

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*A lecture delivered in May, 1914.

The science of political economy, which treats of the way that the world makes a living, is anything even as yet but an exact science. There are not as yet satisfactory and accepted definitions of such fundamental terms as wealth and capital. Theories of value, of wages, of profit, and of interest, are still in dispute. But in the material world men keep on working for wages and salaries and profits, many of them with an interest in the work that transcends the reward, but more perhaps because of the reward. Merchants, manufacturers, and bankers play their parts, many with motives above that of the desire to gain, but still perhaps in the overwhelmingly greater number of cases the desire for gain is the impelling motive.

The desire for profit means that for every dollar expended there must be obtained more than a dollar in return. Were it not for this result there would be no accumulation of capital and the processes of industry and commerce would stop. This desire for gain leads on the whole to the employment of those who are best fitted for their tasks, to the weeding out of the stupid, the lazy, the intemperate. It leads on the whole to the adoption of new inventions and appliances through which production can be more economically effected and to production at the best adapted locality.

It is peculiarly the function of the banker to see that money is not invested except where it will bring return, and this has led to the scrutiny of the security, of the integrity, of the ability, and of the habits of those who apply for capital. The channels through which capital is conserved, through which the processes of industry and commerce are maintained and advanced, all tend to the elimination of the unfit, to the rise of the capable and honest to the positions of direction and responsibility, to the relegation of the less capable to subordinate positions in accordance with their capability. It is not only those who work and save and invest who have an immediate interest in the return of more than a dollar for every dollar expended, but the whole nation has an interest for it is alone from the product of those who work and save and invest that the vast expenditures of the nation, the states, the counties and municipalities can be met; and it is alone from the product of those who work and save and invest that are supported the infirm, the decrepit, the physical and mental defectives, the ne'er-do-well, the unemployable, and the criminal. In the world of business the man has no place above the dollar unless he can demonstrate that he is worth more than a dollar. The business of the country is carried on by those who demonstrate that they are worth more than the dollar, and it is they who support those who cannot demonstrate from an economic standpoint that they are worth even so much as a dollar.

What business is and what business does are, however, not clearly understood by all. Indeed they are widely misunderstood. There are comparatively few who understand that because a man has a large fortune it does not necessarily mean that men without such fortune are necessarily suffering deprivation; that on the contrary the control of the large fortune may mean investment in mines, mills and factories which give employment to thousands, provide the means for paying their wages, and produce the things of need to all people. It is not understood that, whereas large volumes of capital during the earlier period of our industrial and commercial development were frequently the result of the efforts of their immediate possessors who often had to work the harder the greater their fortunes, it is now almost invariably the case that a large volume of capital is formed of the contributors of many, even of thousands of investors, and is administered in their behalf by executives who frequently are not rich but have come to their positions because of demonstrated capacity for large-scale organization and administration. Thus the greater the extent to which the field of industry and commerce is occupied by corporations whose capital is widely distributed, the greater is the extent to which the field of industry and commerce becomes an industrial democracy with boards of directors chosen by vote of the investors, and with executives called to their positions because of their qualifications.

Obviously, it is those who are more successful in preventing the loss of capital who should be entrusted with its preservation, and those who are most successful in the use of capital who should be entrusted with its disposition. Only the few develop this ability, and they only through the experience and practice which lead to successful initiative and successful direction of the increasingly complex processes of industry and commerce. Enterprise, wide information, breadth of grasp, watchfulness of detail, judgment, the ability to choose capable men and give them constant direction are necessary. The very diffusion of thrift and energy, the increasing utilization of machinery, roll up capital from various sources in volume too large to be successfully utilized except by those of great grasp and administrative capacity.

As a rule it is the industrious, the thrifty, the prudent and intelligent who save by living within their income and avail of opportunities for the wise investment of their savings. It is such who under proper restriction ought to have the franchise in the industrial democracy.

The political democracy is differently constituted. Throughout the greater part of the United States every male adult, with the exception of certain defectives and criminals, has or may obtain the political franchise. The high average intelligence of the citizens of the United States has been the source of justifiable pride and has led the nation safely to ride the breakers, but still there have been deplorable mistakes. Of recent years some of the Southern States have established an educational and property qualification for the franchise. There is hardly anyone at this time who does not think that some such qualification ought to have been established immediately after the war before all the emancipated slaves were admitted to the franchise. Just as one example of the continuing effect of the precipitate action of that time may be cited the fact that in the city of Indianapolis, one of the fairest in the land, where social and business life is on a high plane, there are fifteen thousand negroes and these fifteen thousand negroes hold the balance of political power in that city.

Wherever the political boss has established supremacy it has been because of the great body of the ignorant and unscrupulous, whose vote has been gained, not because of appeals to their citizenship, but through the lure of immediate appeal to personal desire. This selfish appeal is not alone of the individual politician who seeks to obtain votes for himself. It is exemplified in the appeal which state legislatures and even the national legislature make to communities and to large organizations for the sake of retaining the hold of the party in power.

This country has many reasons to be proud of its government, but the methods by which it has expended the public money do not constitute one of them. The folly that has characterized many of the congressional appropriations for the improvement of waterways to enable them to carry traffic that never by any possibility will come to them, for the erection of public buildings for the purpose of enhancing the value of the real estate of a struggling town, and the ease with which millions after millions have been added to the pension roll, causing its aggregate to increase after the time when in the nature of things it ought to decrease, are known to all men. Such appropriations mean expenditure that is in utter disregard of sources of income. All sorts of committees initiate all sorts of expenditures and the wherewithal comes from taxation. States and municipalities add recklessly to the burdens of taxation, and yet the administration of most of our large cities is so far inferior to that of cities of corresponding size in Europe as to make their condition a reproach. The political administration in this country, whether of the nation, the states, or the municipalities, has to this time shown little regard, if any, for making even one blade of grass grow where one grew before, of obtaining even one dollar in return for the dollar expended. The financial record of the political government of this country is of appalling wastefulness.

As the franchise in this country is held by virtually all male adult citizens, it is but natural through governmental action benefits which they have not been able to secure for themselves. Manufacturers sought advantages through protective tariffs; railroad promoters sought vast grants of land. It has not been many years since it was the common belief that legislation was controlled by the men in charge of the large business interests and oftentimes by unworthy methods. Admitting that there was a large measure of foundation for this belief, it alone is a sad commentary upon the quality and the integrity of the men elevated to public office by the votes of their constituents.

Now the tables are turned. It is the organizations of great bodies of voters such as the trades unions that have lobbies at the Federal and State capitals, that negotiate with a candidate before his election as to what he will do in return for their vote, that send telegrams of congratulations to governors when they approve bills instigated by the labor organizations. In all such instigation there is no effort to cause two blades of grass to grow where but one grew before, to bring a dollar of return for a dollar expended.

It would seem, therefore, that the political democracy with universal male franchise and the industrial democracy composed of those who have contributed to the aggregate of capital are not pulling together. Even if the extreme assertion were to be admitted that the one is more concerned with the man and the other the more concerned with the dollar, there is yet never to be forgotten that the man is important and that the dollar also is important, that without sturdy and efficient men there could not be the production of wealth and that without wealth there could not be sturdy and efficient men.

That there have been evils and that there are evils in the industrial democracy as well as in the political democracy every one knows. As the leaders of the political democrocy have often sought to gain and retail political power through wasteful expenditure of the money provided by taxation, so also have leaders of the industrial democracy often sought to gain wealth through the ruthless exploitation of those who work for wage or salary.

Would the problem be solved, would the condition of the country be advanced, if the control of the processes of industry and commerce were placed with the political democracy to be immediately directed under the auspices of the office holders elected by the political democracy instead of the executives chosen by the industrial democracy? There is the alternative known as public regulation. There is an old saying that if you want a thing done right you must do it yourself. That dictum has a limited application to the things done wholly by oneself in one's own interest, and frequently does not hold good even within this limit. When it comes to administration, and especially to the direction on a large scale of the processes of a large organization, it is much easier to pick flaws than to perform, to criticise than to do, and this is the principal reason why it is better that the large business of this country be regulated by the people than administered by the people. The army and navy are large organizations to be sure, and are administered by the government, but they are not concerned with obtaining return for the money expended. The condition of the army at the beginning of the Spanish war did not afford a high testimonial to the efficiency of its administration, and it has often been claimed that there is log-rolling in connection with the navy-yards as well as in appropriations for government buildings.

As has time and again been pointed out, when a large organization is under the control and administration of a governmental body that administration is affected in many ways by political influence. The vigorous efforts of many years to place the employees of the federal government under the civil service have only been successful in part. When fault is found with a particular process of governmental administration there is likely to be a wrangle between the party in power that is responsible, and the party out of power that is looking for every opportunity to find fault. The governmental processes are so involved and there is such division of authority that definite responsibility is often, if not always, extremely difficult to place. The appeal is to the voters. If they uphold criticism to the extent of displacing the party in power there is a change of administrative officers, oftentimes a change in general administrative policy. and frequent changes in administrative policy and the personnel of administration usually do not bode well for efficiency.

On the other hand, a public regulatory body, especially an appointed commission of the type now exemplified by the Interstate Commerce Commission and railroad and public service commissions of many of the States, is far less responsive to political influence than a legislative body whose members are elected for short terms and persistently seek re-election. . Such a body may be an efficient critic and censor of the conduct of a business organization, even although its own organization be defective and poorly administered. With proper authority it can bring pressure to bear upon those actually charged with the administration of business organizations that will cause them to remedy abuses such as a political organization would have great difficulty in remedying within its own ranks.

The country is not at this time immediately confronted with the proposal that the government take over the administration of all business. It is, however, immediately confronted with the proposal that the government take over and administer the telegraph and telephone systems, and the proposal that it take over and administer the railroads has become a subject of wide discussion.

If the railroads were taken over by the government it would be inevitable that no end of questions would come into politics that are not now subject to political decision. It is almost inevitable that the tremendous voting power of the rank and file of the employes would cause their votes to be sought by politicians with various promises of increases in pay and easier working conditions. The party in power by having control of the railways would have control of the nation. Should there come to the presidency a man with the ambition to establish a dictatorship, his pathway would be the less difficult.

It is impossible that under governmental ownership the railways would be manned in any appreciable degree by other than the employes now in their service. There likely would be more or less change in the officers charged with administration and management, but there could not be a great deal of change even in these because men capable to fill such positions are now all too few. The great body of under officials and employes would of necessity have to be constituted at least for a time almost entirely of the same men by which it is now constituted. Responsibility for their performance would rest ultimately with governmental officials elected by the people instead of with officers owing their positions to their efficiency and retaining their positions only so long as their efficiency continues.

The experience of the country with appropriations for river and harbor improvements and for public buildings gives ample reason for belief that if the building of new railroads were to become a matter of congressional appropriations the congressmen of one part of the country would endeavor to get railroads for their district, and the congressmen of other parts of the country would endeavor to get railroads for their districts whether there were economic justification for their construction or not; and there would ensue interminable log-rolling and wasteful appropriations.

In recent years there have been debates in the Houses of Congress even as to railroad rates applying in one section of the country as compared with the rates in another section. If the government were to take over the railroads, it is almost inevitable that the shippers of a particular section of the country would cast their influence for the candidate who would endeavor to obtain rates that might give them an advantage in competitive markets. The shippers of other districts would adopt similar methods in opposition. The result would be that the freight-rate structure of the United States that has been undergoing a gradual adjustment to the needs of commerce would be thrown into confusion. That this is not idle surmise is demonstrated by the fact that the legislature of more than one state has forced its railroads to make rates for intrastate traffic solely for the purpose of giving shippers of the respective state an advantage over their competitors of other states.

As has been said, the material welfare of the people of a nation can only be served when two blades of grass are made to grow where but one grew before, when for a dollar expended a new dollar and more is returned. The conduct of industry and commerce under private enterprise does not always serve this end. There are losses in business and there are failures in business, but the loss falls upon the immediate investor.

It has been the theory of this country that the expenditure of the government should serve the needs of the people in ways in which they cannot so well serve themselves. Therefore have been sanctioned the expenditures for offense and defense, for maintaining order, for popular education, and other purposes in which immediate pecuniary return is not expected or desired. Such purposes are properly served by taxation for the common good. If, however, the government enters upon the control and administration of the processes of industry and commerce it takes it upon itself to see that two blades of grass must be made to grow where but one grew before, that for a dollar expended a new dollar and more must be returned. The nearest approach that the government now makes to conducting a business enterprise is in the distribution of the mails, and the Post Office Department has never even been self-sustaining. A recent Postmaster General reported that the deficit in the operation of the Post-Office Department had been turned into a surplus, but that report was arrived at through distorted accounting as reprehensible as any ever undertaken by financial buccaneers in railroad exploitation.

In so rich a country as the United States the burden of taxation has not fallen heavily upon the people, although it has been asserted that if the aggregate taxation, direct and indirect of the federal government, the state governments, the municipalities, and other political entities having the taxing power were assigned per capita, the proportion would be found to be greater than in any of the heavily taxed countries of Europe. If the government were to take over and operate the railroads with the same degree of business inefficiency and business laxity that has characterized other phases of its administration, it would not be many years before taxation would bear severely upon every taxpayer. If the government were to take over and operate the railroads, the express service, the telegraph and telephone service, it would be the largest purchaser of coal, of iron and steel, likely of lumber, and other of the great commodities of commerce. Its payrolls would be increased by over two million employes. With their families this would mean that over ten million persons, or one out of every ten in the United States would be directly dependent upon governmental disbursement.

To know from what sources money is received and in what direction money has been expended, and therefore to know whether or not a new dollar is being returned for every dollar expended, is needed an exact and definite system of accounts that is necessarily the more elaborate the larger the scale of operations, and the more intricate the greater the variety of the processes. The Interstate Commerce Commission in co-operation with officers of the railways has devised a system of accounts for their operation that is a highly developed achievement and that, moreover, is continuously undergoing improvement.

That which the people through this regulatory body have been able to do in bringing to the clear light the receipts and expenditures of the railways, they have never been able to bring about for the receipts and expenditures of the political governments through the officers they have elected to administer those governments. It is in but few states that the accounts of moneys received from the people and expended for the people are kept scientifically and intelligibly. The wastefulness of the expenditure of the moneys received from the taxpayers of the large cities is a by-word and the so-called accounting systems of most of these cities are beneath contempt.

The national government, which does not provide the capital for the railways nor the expenditure for their maintenance, properly compels them to keep comprehensive and accurate records of their traffic and of their traffic in relation to expenditure.

The government, which does provide the capital for the construction of canals, the improvement of rivers and the expenditure for the maintenance of all inland waterways, has not required until recently any adequate record of the traffic carried upon them. Such statistics of this traffic as are given in the reports of the chief of engineers are compiled from such data as are available, but which admittedly are unsatisfactory. It is, perhaps, not an exaggeration to say that the entire value of the entire traffic carried upon many an inland waterway is not equal to the annual expenditure of the government thereon.

Many of the public regulating bodies during their earlier years were outspoken champions of the people against the corporations. They not only were professedly partisan in opposition to the large business interests of the country, but were vindictive in public utterances against the business interests, and especially against the railways. But there are always two sides to every question. With the continuance of their service the public commissions are gaining the experience which the better enables them to understand not only the evils in business which must be removed but the beneficent activities of business which must have strength and support. On the other hand, those engaged in the administration of business and especially of the great corporations, have come the more clearly to understand the line between business energy and undue aggressiveness.

A recent phase of public regulation that is of great significance is the public arbitration of industrial disputes. Competition was supposed to serve the public good by putting each man on his mettle, by allowing him to obtain benefit from the social organization to the extent that he contributed to the benefit of the social organization. When the competitors joined in combination, whether of labor or of capital, there was a modification of competition. Instead of competition between individual and individual for employment there came a struggle between trade union and corporation as to the division of the returns from the product which is the joint result of labor and capital. The strike and the boycott have led to mediation, conciliation and arbitration, through which it has come about that boards of arbitration chosen by the disputants or by the government or in part by one and in part by the other determine the questions at issue. This procedure is a step away from pulling apart and a step toward pulling together for the common good. In the arbitrations the contentions, the arguments and the facts of the disputants are brought to the light. This alone helps to a better understanding that itself ought to lead to the more peaceful, amicable and well-considered adjustment of future disputes.

This is one of the ways in which the whole people are gaining that understanding of the various phases of indutry and commerce which may perhaps in time fit them to control and to direct the industrial and commercial processes in the same way that they now control and direct the processes of the political government, or better it were to say in the way that they ought to control and direct the political government through the means at their hand.

In the ideal industrial state depicted by Edward Bellamy in "Looking Backward," it is the whole people who do control and direct the processes of industry and commerce as they do the construction and maintenance of the highways, public sanitation, the channels of communication and other parts of the social mechanism for the social good. In that ideal state of Bellamy, which perhaps is typical of the ideal of every one who hopes for the fullest attainment of the brotherhood of man, there are neither physical nor mental defectives because, under the conditions of living and of marriage, such could not be born. After a preliminary period of education from childhood through youth carefully adapted to develop the physical and mental characteristics of the individual, each boy and girl is assigned to a round of preliminary service including work with the hands in pursuits that at the present time are considered to be those of the drudge and the menial. But in Bellamy's state there is no drudgery, for all recognize that all work is service for the common good.

After the preliminary round of service the youth is assigned to the vocation for which he has manifested particular aptitude. By the time he is forty or forty-five years old his contribution to the material welfare of the state is deemed sufficient to justify his retirement and the spending of the remainder of his life in self-cultivation, except that after five years of such leisure and study in which his view has been broadened, he may be called upon to serve as one of the directors of the industry in which he spent the larger part of his service. The directorate of each industry determines the kind of product as nearly as possible in accordance with the wishes of the people, the places of production and the quantities of production sufficient to meet the needs of all the people.

A national board composed of members selected from the various industrial boards determines questions of national concern, among others the amount of the surplus of production that shall be used as capital for future production. In this state every one puts forth his best efforts at all times because of the satisfaction that lies in doing the best that can be done and in the knowledge that thereby he best serves the social welfare. It is so with the inventor, the composer, the writer, the man of affairs, with everyone in every vocation; the satisfaction of doing is the only motive, and approbation of their fellowmen the reward.

There is probably no one who would deny that the attainment of such a state would be the transcendent achievement of man. There apparently are those who think that such a state could immediately be brought about by abolishing present institutions and establishing such a social state forthwith. The demonstration of the futility of such a proposal leads, however, to the perception that the social, the material, and the spiritual progress of man is toward just such a state as Bellamy depicts. The pressure of the political forces, of the economic forces, of the spiritual forces, is moulding men and the institutions of men into fitness for such a state. Great as has been the progress the goal is as yet far beyond and it cannot be reached except step by step along the path along which we have come step by step.

The entire country is in a ferment of economic education. The theory of our government is that its institutions rest upon the will of the people, but that they shall be determined only after thorough popular discussion and deliberation. It is to be hoped that the present discussion will not be cut off by a precipitate decision on the questions at issue but will continue until there is thorough understanding on the part of all men of the economic transition which has been taking place during the last half century. When that understanding has been reached it may be that the organization of business will have become so adapted to the service of the whole people that there will be no case of governmental control versus private enterprise, that the work of all the people for all of the people will have attained that development and the recognition which may lead to the realization of Bellamy's ideal state.

The Effect of the War Upon the Railway Industry

NOTE:—The following extracts taken from an address delivered on September 7th, by Fairfax Harrison, president of the Southern Railway at the Labor Day celebration in Spencer, N. C., are of peculiar interest at the present time in that many of the influences cited are effecting railways generally throughout the United States.

OUR high level of wages and conditions of employment at least as favorable as substantially all of the other railroads in the United States were established at a time when the business of the company was normal and when there was reason to expect increased earnings rather than the reverse. Suddenly we find to-day that the entire situation as affecting the business of the company has been changed. Under the modern systems of world-wide exchange of commodities and of international credits, though the American people are at peace with all nations, the war in Europe has profoundly disturbed all lines of business in the United States and has brought about a curtailment of production and a consequent falling off in transportation, the full extent and duration of which no man can now predict with certainty. We know, however, that, although the war is being waged three thousand miles from our shores, its effects are being felt to a greater or less degree by practically every family in the United States. We also know that, unfortunately, the effects of the war are being felt in no part of the United States more seriously than in the South.

But a few weeks ago the South was looking forward after a winter of hesitating business to a season of unsurpassed prosperity. Rejoicing in having a substantial monopoly in supplying the world with cotton, the Southern people were looking with satisfaction upon the bountiful crop maturing in the fields which they had every reason to believe would be sold at a remunerative price. When Europe plunged into war, because of the fact that a large proportion of the crop must seek foreign markets, the cotton monopoly of the South, instead of being a source of strength, became an economic weakness. The market for cotton was wiped out. Steps are now being taken by the Federal Government and by patriotic bankers to relieve the situation and prevent widespread bankruptcy and distress throughout the South. However successful these may be, they can afford only partial relief, for, excluded from foreign markets, a large proportion of the crop must be stored in the South and will not be offered for shipment for many months. The situation is made worse by the fact that the activities of American cotton mills are being hampered, not only by financial conditions, but also by inability to secure dyes which in the past have been supplied only by European countries involved in the war. Likewise Southern farmers will have to restrict their acreage of leguminous crops this year, because of inability to secure supplies of seed from Germany and Austria. Looking forward to next year, we find that, unless the war shall be of short duration, the manufacture of some kinds of commercial fertilizers, which are an important article of freight for the railroads of the South, will be greatly restricted because Germany is the sole source of supply of potash.

Under present conditions and prospects in the South all lines of business have fallen off and railroad traffic and earnings are showing substantial decreases. We hope for the best and are doing all in our power to bring about improved conditions. We are continuing the extensive construction work for which, fortunately, capital funds were secured before the war began. The disbursement of this money in Southern communities will be helpful, not only to the men employed, but to Southern business enterprises generally. We realize that, with all the great manufacturing and commercial nations of Europe involved in the war, there is splendid opportunity for the expansion of the export trade of the United States, especially to the markets of Central and South America, and we are actively co-operating with Southern manufacturers and merchants who desire to enter this field. But, under most favorable circumstances, it will take time for the business of our section to recover, and while we hope for better conditions for the South and the Southern Railway, we can not be blind to the present situation of declining traffic and decreasing earnings. It is then a time for caution. The Manufacturers' Record has this past week given an admirable statement of the duty which this situation imposes on us all. I venture to quote a paragraph:

"Every responsible citizen of the United States, in whatever calling he maybe, should lose no time in adjusting his material affairs to meet the economic emergency created by the temporary paralysis of civilization in Europe. The very conveniences with which civilization has equipped mankind have begotten a world-wide sensitiveness to any action anywhere interrupting the play of the forces of civilization. In war involving directly seven peoples of Europe, and indirectly all peoples of that continent, the material influences for the advancement of the human race have virtually collapsed. Consequences are already felt in this country. They will become more manifest day by day and will persist for a while even after wholesale murder and rapine have ceased in Europe. The people of the United States are to-day beginning to pay the bills for the destruction wrought. Such payments mean resources taken from productive enterprises here and unjustified burdening of every capitalist, and wage-earner, every farmer, every manufacturer, every banker, every merchant, every broker in the United States."

In this situation the interests of all officers and employes of the company are identical with the interests of its owners. Wages and dividends are drawn from the same fund—the earnings of the company—with this important difference, that wages must be paid first regardless of whether there is anything left for dividends or not. But the owners of the property who have adventured their money in the provision of this great railroad system which gives employment to tens of thousands of Southern people have rights which can not be disregarded, and, but for the fact that it was anticipated that the company would earn reasonable profits, it would have been impossible to secure the money with which we are now making it not only a more efficient carrier for the people of the South and a safer plant on which our employes may work, but are putting it in a position to afford employment to increased numbers of men when business shall have once more revived.

The earnings of the railroad, which are at once the source from which its expenses must be paid and the basis of its credit, can not be advanced by the mere volition of its managers. We are powerless to raise a single passenger or freight rate without the approval of a state or federal commission, and we are now face to face with the fact that earnings are decreasing, and that since August first each week's revenues have been less than for the previous week, though the falling off has as yet been rather an indication of a tendency than of an actually serious condition.

I do not anticipate any trouble for the company, but my point is that manifestly this is no time for consideration of wage increases or the eight-hour day. I should be lacking in frankness if I did not say that these matters can not now be considered by the management of Southern Railway Company and if I did not at the same time express the hope that our decrease in business may not become such as greatly to curtail opportunity for employment and make necessary a policy of strict retrenchment. Like the general staff of one of the warring nations of Europe we have long had a plan of retrenchment ready for the emergency and I may say that, disagreeable as retrenchment always is, we have the courage to put our plans into operation, if that shall seem to be to the best interest in the long run of the company and of the Southern people. But, please God, it may not be necessary. What shall be the event lies largely in the demonstration of character, and patience, and cheerfulness of Southern men and women, and I venture to believe that we, as Southern men and women, will be as ready, as ever our ancestors were, to accept sacrifices when that shall prove necessary. If such shall become the necessity of Southern Railway Company, the sacrifice will be borne by officers as well as men, but I pledge you my word that I will keep the interests of our men and those dependent upon them faithfully in mind and that no sacrifice will be asked until it shall be necessary. As one responsible for the ultimate decision, I pray for strength to decide right and I ask with confidence the understanding and the support of all you men and women here assembled with whom I am linked in a strong bond of common service to the public and the attachment of many years of association.

Effect of War Upon United States Railroad Bonds

UNUSUAL interest was added to the annual meeting of the Society of Railway Financial Officers held at Lenox, Mass., on September 16th, by an address delivered by Louis B. Franklin, vice-president of the Guarantee Trust Company, on the effect of the European War upon United States Railroad Bonds. Mr. Franklin said that the normal factors governing the prices of securities are to a large extent rendered ineffective by the present war and the consequent international financial situation, and any discussion on the trend of prices of American railroad securities involves a consideration of the economic effects of the conflict. "In the effort to determine what this effect will be," he added, "it is natural to refer back to other occurrences of similar nature and endeavor to forecast from them something of the future.

"Upon careful analysis we find that no war in history is comparable in its effect upon financial transactions with the present upheaval.

"A study of the probable effects of the war leads naturally to a division of these into two classes, namely: those of a temporary or artificial nature and those of a permanent or basic nature.

"We have already experienced most of the immediate results. We have seen the system of international credit relations disrupted at the first blow. Moratoria have been generally declared throughout Europe, and payments due us are held up while we, as a neutral country, are expected to meet our obligations at maturity. American securities held abroad have been dumped into our markets in such volume that self preservation compelled us to call a halt by the closing of our principal Stock Exchange and the cessation, by agreement, of the sale of all unlisted securities. Our enormous exports of gold and the consequent strain of our banking facilities have forced us to resort to the expedients of clearing house certificates and emergency currency.

"Our foreign commerce, except in foodstuffs, is almost at a standstill. The Bureau of Agriculture in its recent report gives promise of one of the largest cotton crops in the history of the country. Normally, we export approximately 60 per cent of this crop, and at the present time, through the shutting down of foreign mills on account of scarcity of labor, lack of demand for the finished product or inability to finance, hardly a bale of export cotton is moving and extreme measures are being taken to care for the surplus which is sure to exist.

"Despite the fact that the stringent measures already adopted have prevented panic and to some extent opened the channels of trade, we have still to face the problem of meeting the wave of foreign liquidation which is likely to break upon us upon the reopening of our markets. It has been estimated that American securities to the extent of from four to seven billion dollars are held in Europe, and while it is evident that a large part of these are not for sale at any price, it is quite certain that the drain on the resources of the belligerent nations will be so tremendous as to necessitate enormous liquidation. Their own securities are due to suffer more than ours and our markets are therefore likely to be the most available. This problem must wait until our international credit and commercial relations have been placed on a more normal footing. We cannot buy securities unless we can sell commodities.

"If we are unable to take care of our securities now offered for sale by Europe how can we expect to find a market for the additional securities which corporations are so anxious to sell to provide for maturing obligations and necessary improvements and extensions? The prospect is indeed not a favorable one. There is no market for bonds now and it is hard to say when there will be one and what prices bonds will command when the market opens. In any event, our railroads on the average have now an over production of bonded debt compared with the investment represented by capital stock and it should be by additional issues of stock that present necessities should be financed. How this can be done under present business conditions, and the public prejudice against railroad securities is a difficult problem.

"Against such an array of unfavorable factors as the immediate result of war, what have we that may be of benefit? In a few lines of business increased activity is indeed noted on the expectation of increased exports of goods to neutral countries heretofore supplied by belligerents. But here again we are confronted with the difficulty of financing any such shipments and the lack of neutral ships to act as carriers. In one respect only is there an immediate benefit and that is in the larger demand at increasing prices for our food supplies, and despite the difficulty of transportation and payment, such shipments are being made in quantity.

"Capital, which for the past few years has been difficult to obtain will be in still greater demand to make good the losses of war, and it is reasonable to look forward to a long period of higher interest rates on fixed investments, a small supply of new capital and lower prices for investment securities unless we can discover off-setting factors of a sufficiently favorable nature.

"Let us look then and see what we have on the other side of the picture. Possibly there may be a ray of sunshine somewhere. One of the first results of a condition of affairs such as we are now experiencing is increasing economy on the part of practically every class of society. I believe that the generally prosperous condition of this country during the last twenty years has led to a gradual reduction in the proportionate amount of savings which has in the last few years contributed to our higher cost of living and our higher cost of capital. It is generally conceded that the maximum of saving does not take place in periods of great prosperity and an upheaval such as the present crisis is often the signal for a return to a simpler scale of living and an increased proportion of saving. It will not take a very large increase of savings per capita to make a radical increase in the amount of capital available yearly.

"I have already referred to increased activity in certain lines of business as one of the immediate results of the war and there are likely to be permanent results of a similar nature.

Efforts are already being made looking to the restoration of our merchant marine to its former place of prominence in the commerce of the world, which, if successful, will result in many millions of dollars per annum formerly paid to foreign carriers remaining in this country. (Is this an economic gain in itself?)

"Our imports of drugs, dyes, chemicals, toys, gloves, clothing, etc., from Germany have been stopped and supplies of these articles are diminishing and prices rising. American ingenuity is already at work in an effort to manufacture in this country much that we have heretofore imported. If this effort is crowned with success, our productive capacity will be permanently increased and our trade balance benefitted.

"Markets heretofore held by belligerents, principally Germany, whose foreign trade is now at a standstill, are now open to our manufacturers and if our opportunities in this respect are not neglected our export business should be permanently benefitted."

The Interest of the Average Citizen in Railway Prosperity

NOTE:—The following extracts are from an address delivered by W. L. Stanley, of the Seaboard Air Line, before the recent convention of the Train Dispatcher's Association of America at Jacksonville, Fla. They indicate in a most convincing manner how the prosperity and welfare of every American citizen whether in or out of railway employ is intimately associated with, and to a large measure dependent upon, the prosperity of the railways.

DOES the prosperity of the railroads of America interest me individually? When I say individually, I am speaking to you, first, as a representative class, and through you to every other citizen of this country, it makes no difference whether he is engaged in railroad service or not. I would ask through you the question: Does the prosperity of the American railways interest me as a farmer? Does it interest me as a mechanic? Does it interest me as a merchant? Does it interest me, it makes no difference in what work I am engaged?

If I look at it from a selfish viewpoint, if it appealed to me solely with reference to my own interest, I would say that I am interested in the prosperity of the American railroads because my earning capacity, my promotion depends upon the prosperity of those railroads. You, Mr. Train Dispatcher, sitting in your office, day after day, have an interest in the railroad for which you work; you represent that road and you are connected with that road in a capacity, and in a service broader than that comprehended by the word employe. You are just as much interested in it to the extent that you give your brain, your brawn and your time to it, as the man who invests his money to buy stock and bonds in that company.

Every man ought to feel a peculiar interest in every concern in which he works, for the selfish reason that he has money, which is represented by his brain and his time, invested in that enterprise. I am interested in the prosperity of the American railroads for the reason that I am an employe of these railroads; I am interested in the prosperity of the American railroads for the reason that I want to see the treasury from which my compensation comes reasonably full. But that is the remotest of all reasons, the least of all consideration as to why I, as an American citizen, am interested in the prosperity of the railroad for which I work. I am interested in the prosperity of these railroads because they are the greatest developers of the material resources of this country of ours.

It is not a very far cry, gentlemen, from 1826, when the first railroad was built in Maryland, to 1914, when this country of ours is threaded by railroads from the Atlantic to the Pacific and from the North to the Gulf of Mexico, but the history of this country, its development, its prosperity, have been co-ordinate and co-extensive with its railroad development. What would the coal mines of West Virginia, what would the gold mines of Nevada, what would the fruit producing territory of Florida and California be worth to this country of ours if it was not for the railroads? And I say to you now that we do not pause often enough to consider when we discuss and criticise and abuse the railroads that they have been the makers of whatever prosperity and of whatever development we have had in this country during the last few years or during the last century.

But in the next place, I am interested in them as a means for the exchange of commerce and the interchange of ideas. Have you ever realized, have you ever stopped to think how little this world is with the railroads and how big it would be without them? Have you ever stopped to consider what we enjoy to-day that our fathers were deprived of? Have you ever stopped to think that you are heir to all the prosperity, to all the wealth, to all the resources of this country for the simple reason that their bands of steel have linked every portion of this land together?

I want to suggest to you that the railroads are the greatest of all employment agencies. I do not mean to confine myself alone to the thought that the railroads in themselves and through themselves employ more men than any other instrument or agency of commerce in this country, but I want to suggest a thought in addition to that: that through the railroads, through what they buy, through what they do, through what they accomplish, they are the greatest employment agency of this country. Someone has truthfully said that the truest barometer of business in America is the prosperity or adversity of the American railroads, and why should it not be so? Have you ever stopped to think that the American railroads use half of the steel that is produced by the American people? Have you ever paused to think that they buy forty per cent of the lumber that is placed upon the American market? Like the pebble that was thrown into the brook, the ripples from which reach from one to the other until they touch the shore, so the buying by American railroads starts the activity of commerce in the steel business and in the lumber business and so on to every branch of business activity.

Then I am interested in the prosperity of the American railroads for the reason that without them the people themselves would soon have not only their means of livelihood, but their means of sustenance cut off. It has been said, I think truly, that without the transportation lines that center in New York there would be a famine in that city within three days, and cannot you gentlemen here, who are acquainted with localities in the territory from which you come conceive of conditions similar to that? Take the railroads out of this country and you would have famine and suffering where to-day they bring those things that make these conditions impossible.

Now, gentlemen, I just want to suggest, and I am not going to take time to discuss them, some other reasons for the benefits that will accrue to me individually if the railroads of this country are prosperous. First, increased business activity; second, employment as a result thereof for all the people; third, nation-wide prosperity—every man is heir to the fruits of individual effort that tends to the common good; fourth, increased competition in transportation, as a result of new railroad construction, which to-day is practically at a standstill.

Let me tell you what I would advocate if I were a member of a body that had authority to control the railroads. The first thing I would advocate would be to ascertain what is a fair and reasonable compensation for the service that the railroads render and then, having done that, I would say: "Mr. Railroad, you have got to have automatic block signals on every mile of your road; you have got to have stone ballast under every cross tie on your road; you have to throw around your operation every factor of safety that the human mind can conceive of; in the next place, you have got to give the people of this country, not only reasonable but extraordinary service, so that a man in season and out of season may make a trip from one point in this state or one point in this nation to another." And then, gentlemen, what would be the condition? We would have a safe railroad; we would have a sound railroad financially; we would have reached that point in our national history where we would have put both human life and excellence of service beyond the mere dollar.

The Evolution of Signaling

An unusually interesting article on the Evolution of Signaling on the Baltimore and Ohio by F. P. Patenall, appeared in a recent issue of the Baltimore and Ohio Employes Magazine. The extracts from the article herewith presented together with the accompanying diagram give a comprehensive review both of the history of railroad signaling and its present operation. To quote from the article:

"In connection with three plants installed by the Pennsylvania Steel Company in 1886, lower left hand quadrant signals were used.

"Since the year 1887, and from that time to the present, it will be noted by reference to the diagrams that, notwithstanding the various designs used, a most important feature was uppermost in mind, viz.: the distribution of metal so as to insure the spectacles being so counterweighted as to result in its gravitating toward the stop position in case of failure of the connections. Additional weights applied to the balance lever or crank at the base of the mast augmented this purpose, and also provided means for overcoming friction in the connections or other obstructions in case of failure of the connections.

"Figure No. 1 shows one of the most primitive designs of train order signals used extensively prior to 1886, and continued in operation long after that date, but finally discarded in favor of the semaphore signal.

"This disk form of signal is well known, and in fact has by no means become obsolete, inasmuch as many thousands of automatic signals of similar design (see Fig. No. 2) are in operation and are giving satisfactory service. These latter, of course, are of improved design, and are power operated.

"Figure No. 3 shows a Revolving Banner Signal, also power operated, and many of which are in successful operation, although this type of signal appears to be passing.

"To describe briefly the construction of the disk signal, Fig. No. 1, will take up very little space. "The movable parts of the signal consisted principally of red and green cloth disks, mounted on slides, operated on slides, operated by means of ropes, the slides being raised when it was desired to display a proceed indication. They returned to their normal position by gravitation. The correct principle in this respect, therefore, was laid down.

"Later on metal disks and frames were substituted, the use of which added a feature of safety, inasmuch as with such added weight there was less liability of slides or shutters sticking in the proceed position. These metal slides were also equipped with lenses of the desired colors. These resulted, principally, in intensifying the colored lights displayed as compared with the primary light being screened either by red or green cloth. The signal was arranged to govern traffic in both directions, there being two slides for each direction, viz., one red and one green.

"The proceed caution signal was displayed by the raising of the red slide, and the lowering of the green slide into view, the latter at night being kept normally up, so as not to impair the strength of the light when a stop indication was being displayed. The lamps used were fitted with the well known Zenith burner and globe; masts were hollow, and lamps were hoisted or lowered, as desired, by windlass at the base of the mast.

"The weight of the slide being relied upon entirely to restore the signals to the normal position, it was found difficult to operate these from a distance far away from the office, inasmuch as the weight of the rope had a tendency to overcome the weight of the slide, and the result was that trouble often occurred from that source.

"In 1885 and 1886 some small installations of interlocking were made on the Baltimore and Ohio Railroad by the Pennsylvania Steel Company and the Union Switch and Signal Company, in connection with which the semaphore spectacle (Fig. No. 4) was used.

"These were mounted on triangular lattice iron

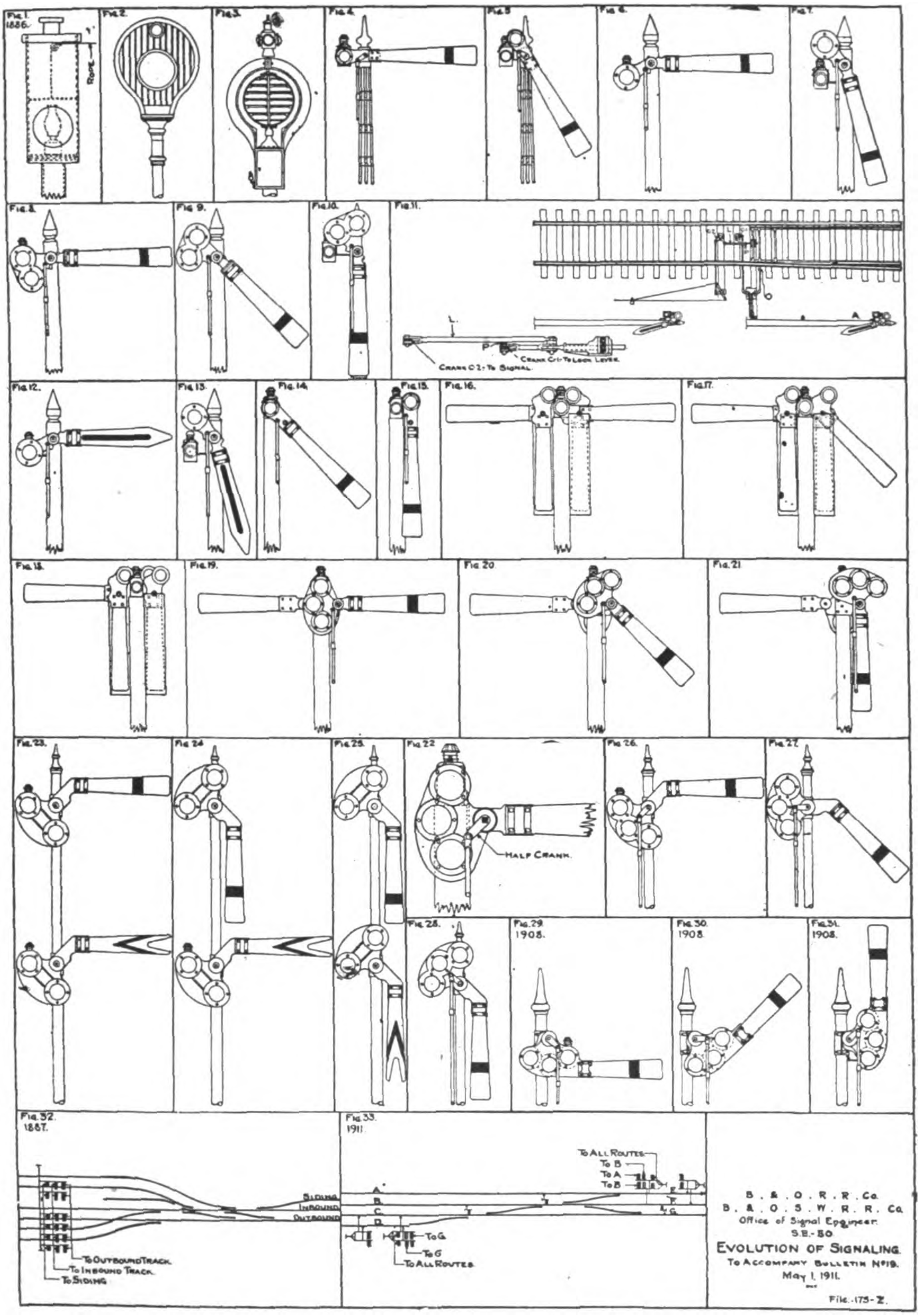


Fig. 1.
1886.
Rope
Fig. 2.
Fig. 3.
Fig. 4.
Fig. 5
Fig. 6.
Fig. 7.
Fig. 8.
Fig. 9.
Fig. 10.
Fig. 11.
L.
P
A
Crank C2: To Signal.
Crank C1: To Lock Lever.
Fig. 12.
Fig. 13.
Fig. 14.
Fig. 15.
Fig. 16.
Fig. 17.
Fig. 18.
Fig. 19.
Fig. 20
Fig. 21
Fig. 23.
Fig. 24
Fig. 25.
Fig. 22
Half Crank.
Fig. 26.
Fig. 27.
Fig. 28.
Fig. 29.
1908.
Fig. 30.
1908.
Fig. 31.
1908.
Fig. 32.
1887.
Siding
Inbound
Outbound
To Outbound Track.
To Inbound Track.
To Siding
Fig. 33.
1911.
To All Routes
To B
To A
To B
A.
B.
C.
D.
E
F
G.
To G.
To G
To All Routes.
B. & O. R. R. Co.
B. & O. S. W. R. R. Co.
Office of Signal Engineer.
S.E.-50.
Evolution of Signaling.
To Accompany Bulletin No. 19.
May 1, 1911.
File.-175-Z.

DIAGRAM SHOWING EVOLUTION OF SIGNALING ON THE BALTIMORE AND OHIO RAILROAD, PREPARED BY F. P. PATENALL, SIGNAL ENGINEER OF THAT ROAD.

posts, the semaphore shaft and half cranks being in one piece, or as are now frequently used for inside connected signals. These blades moved to a position for proceed (clear) 60 degrees below the horizontal (see Fig. No. 5).

"In 1887 the spectacle shown in Fig. No. 6 was adopted, its design resulting in more satisfactory service, inasmuch as it provided increased weight for restoring signal to the horizontal (stop) position, there having been a tendencv in the use of spectacle No. 4 for false indications occurring with the least variation in the connections, excepting where considerable outside additional counterweight was applied. Fig.No. 7 shows the proceed (clear) position.

"A similar defect, although not so serious, developed later on in the use of the specacle, Fig. No. 6, on account of signals being operated at greater distances mechanically connected.

"In 1889 spectacle, Fig. No. 8, was adopted, having two receptacles for roundels, at which time the proceed(clear) position of the blades was, as shown in Fig. No. 10, inasmuch as variations in connections would not be sufficient to change radically the position of the blade (when indicating stop) towards the proceed (clear) position and thus prevent its being accepted as a proceed indication. It will be seen that in order to display a white light, both roundels were required to pass beyond the light. For this operation a considerable sweep of blade was necessary, and signals which did not move to the proper angle for proceed (clear) were considered as imperfectly displayed signals, and trainmen were governed accordingly. In the use of this type of spectacle additional information was provided, as shown in Fig. No. 8, viz., the 45 degree or caution indication, when used for manual block signals the lower roundel being green, as shown in Fig. No. 9. The use of Fig. No. 10 was discontinued, however, because the position of the blade, when vertical, was poorly outlined. That is, its being displayed in front of the mast made it indistinct, there being no criticism of positions of blades as displayed in Figs. Nos. 8 and 9.

"In 1889 recommendations were made to provide distant signal protection at facing switches, which resulted in the adoption of the arrangement as shown in Fig. No. 11, whereby the distant switch signal was operated by a separate lever, locking the switch lever in the normal position only, the plunger lock being fixed in the center of the track, using standards material. One special feature worthy of attention was the method of signal control, which was not directly from the lock lever, but required that the plunger lock should have its full throw in order to bring the signal to the clear position, which was entirely dependent on the plunger being properly guided; hence, should the plunger casting be torn out it was not possible to clear the signal, although it was possible to reverse the lock lever. The reason for this was that link L would pivot on pin P, which, when pressure was applied, in taking up wire tension (there being no guide for the plunger), resulted in link L swinging to the right or left, thus having no effect on the signal. Later on this method was abandoned, because various troubles were encountered from dragging chains and other parts of equipment which frequently tore out these connections between rails. It will be noted that the blade on signal used for the purpose was pointed (see Fig. No. 12, stop position and Fig. No. 13 (proceed position), the angle of the blade below horizontal fop roceed (clear) having been 75 degreees.

"After this it was deemed advisable to provide more adequate protection in the way of a semaphore signal at the switch, and signal A was added to the lay-out (see Fig. No. 11) and adopted.

"The use of vertical lever stand has proven much more satisfactory than the levers arranged horizontally on the ties, especially in winter weather.

"The home switch signal was operated by the switch lever, and the distant switch signal was operated by a separate lever, the distant lever locking the switch normal through a bolt lock. By this means all connections are arranged outside the rail, thus avoiding possible damage from the dragging of equipment parts.

"Home and distant switch signals were later equipped with square end blades, the distant signal indicating in the 45 degree position for caution, the home indicating in the horizontal position with the switch open. This arrangement will be superseded by a special type of switch target, because of the difficulty in classifying semaphore signals for such use and to avoid possible confliction with other signals.

"In 1891 it was considered necessary on some of our heavy freight lines to install spacing signals, which were operated manually and indicated only two (proceed) positions, viz., caution (see Fig. 14) and clear (see Fig. No. 15). At that time we were agitating the universal adoption of the square end arm for all signals, and specially the use of same in the 45 degree position for caution signals.

"This spacing signal was restored to the normal (caution) position in the rear of the train, indicating to a following train that the preceding train has passed an arbitrary (according to division rule), number of minutes previously, and after an additional lapse of time the signal was changed to the vertical (clear) position.

"It will be noticed, therefore, that the caution indication was displayed by the arm in the 45 degree position, although at that time distant signals having blades with forked ends were used, indicating caution in the horizontal position which still is common practice on some roads, although it cannot be considered logical. In this case straight form of semaphore castng was used, there being an abundance of counterweight to carry the signal to the normal (caution) position.

"During the period extending from 1888 to the present time three-position block signals, both manual and automatic, have been in continuous operation on the Baltimore and Ohio System.

"The type of manual block signal in operation from 1888 to 1900 is shown in Fig. No. 16, stop, Fig. No. 17, caution, and Fig. No. 18, clear.

"In 1900 the standard was changed to that shown in Fig. No. 19, stop, Fig. No. 20, caution, and Fig. No. 21, clear, the spectacle being designed with three receptacles for colored glasses, two only at that time being used, the remaining opening being in view of the possible change from the white light to the green light for clear and the use of the yellow light for caution.

"This type of signal is still in operation in manual block territory, as well as in automatic block territory at stations where it may be desirable to issue orders.

"It is necessary to digress here from the subject of semaphore spectacles to that of semaphore shafts and half cranks, as mentioned in connection with Fig. No. 4.

"In 1901 a standard was adopted which required the application of the operating half crank direct to the shaft for all mechanically operated signals in lieu of the eye rod connecting with the stud riveted to the spectacle casting, the object being to gain control of the blade through the shaft, so that in case of breakage of the spectacle the blade would still be controlled through the shaft. The reason for this change was on account of a derailment produced by the spectacle end of a semaphore breaking off at the time it was placed in the stop position, which resulted in the blade's falling to the clear position, there being no counterweight after breakage.

"This was one of the first principles adopted in early signaling, and should be followed.

"The application of the half crank is shown in Fig. No. 22, as is also seen in Fig. No. 4.

"Having commenced in 1888 with three-position signaling in mind as the most intelligent method of conveying information to the runner, a startling set-back was experienced in 1902 when 97 miles of double indication (home and distant) automatic block signals were installed. The lower quadrant vertical position blade, however, outside the line of the post for the proceed (clear) indication was adhered to, although the forked end distant blade indicated caution in the same position as the home blade indicated stop (see Fig. No. 23, stop, Fig. No. 24, proceed, prepare to stop at next signal, block clear, Fig. No. 25, proceed, next signal at proceed).

"The design of the semaphore spectacle being as shown in Figs. Nos. 23, 24 and 25, had two spectacles for the colored glasses, from which it will be seen that unless the blade assumed the proper positions the light was obscured, which was objectionable. This, however, resulted in a vast improvement in the adjustment of mechanically operated signals, it being necessary to keep the connections in a most efficient operating condition. Otherwise imperfectly displayed signals would have occurred.

"The trouble above-mentioned, however, of the light being obscured during the passage of the casting from the vertical position to the horizontal position, or vice versa, was overcome in the adoption of spectacle shown in Fig. No. 26, which provided three receptacles for colored glasses, the lower one being left open for the display of the white light, which, however, will be used when the green light is adopted for the clear night indication.

"In the home signal spectacles, Figs. Nos. 23, 24 and 25, two red roundels were used, and two green roundels in the distant spectacles, making it necessary for the blade to travel the required distance in order to display the proper proceed night indication.

"Having in view the absolute necessity of uniformity in signaling for all divisions, it was decided in 1903 to dispense with the double (home and distant) indication previously mentioned, using instead one blade (three-position signaling), as shown in Fig. No. 26, stop; Fig. No. 27, proceed—prepare to stop at next signal; Fig. No. 28, proceed—next signal at proceed, and this method is still in operation, and all further work was done in accordance therewith, the same indications being used in manual block territory.

"In February, 1908, the most interesting evolution took place in the design of spectacles, in that the upper quadrant three-position method of signaling was authorized to be used in all future installations, and where heavy renewals were made. The upper quadrant spectacle adopted is shown in Fig. No. 29, stop, Fig. No. 30, caution, and Fig. No. 31, clear

"The first installation of signals of this type was at Cumberland, Md., in February, 1908, the high speed signals being power operated and the low-speed signals mechanically operated in conjunction with the installation of a mechanical interlocking plant at the east end of Evitts Creek Yard.

"Several sections of three-position upper quadrant automatic signaling have since been put into operation.

"The adoption of the upper quadrant type of signal as a standard is based on the fact that the same results in cost of construction, with lesser cost of operation and maintenance, and with the maximum safety, from the use of a semaphore spectacle of less than one-half the weight of the lower quadrant type. It should also be borne in mind that undue weight added to the blade, such as ice, sleet or snow, will result in the display of the least favorable indication.

'This method of signaling is universally conceded to be better and safer than those previously used, and has been in successful operation since its adoption.

"As to the methods of signaling, in 1887 an interlocking plant was installed on this road at Camden Station, Baltimore, Md., in connection with which three signals on a mast were used, as shown in Fig. No. 32. The upper signals governed movements from the shed tracks to the outbound track; the second signals governing movements from the shed tracks to the inbound track, and the lower signals governing movements from the shed tracks to the siding.

"The lower signals were arranged to be illuminated at night by reflecting the light onto the signal blade, no colored light being used, consequently at night the position of the blade governed the same as in daylight. Colored lights, however, were used in connection with the upper and second signals.

"As a comparison, Fig. No. 33 shows the signaling at a plant installed in April, 1911, wherein it is noticeable that the three-blade signal is still considered good practice, although in the passing of twenty-four years' experience the use of the third or lower signal was dispensed with for a period, it being assumed that two signals could very capably fulfill all the requirements. This latterly has been proved an error,as the third or lower signal relieves the signals above it from transmitting special information, which can be done more logically and with greater safety in the use of the third or lower signal."

The Proposed New Welland Ship Canal

Note:—The following paragraphs are from a report by J. L. Weller, engineer in charge of the proposed new Welland ship canal to the Canadian Department of Railways and Canals. In view of the fact that the successful completion of this canal would mean a greatly intensified competition between Canada and the United States for the eastbound movement of the vast crops grown within the interior of the country and adjacent to the Great Lakes, the proposed plans for its construction as outlined herewith will prove of interest not only to railway engineers but to traffic officials as well.

The proposed Welland ship canal as finally located follows the course of the present canal from Port Colborne on Lake Erie to Allanburg, half way across the peninsula. From this point an entirely new cutting is to be made, crossing the present canal just below lock No. 25, the water level of the two canals at this point being the same, viz.: 568 feet above sea level. The new canal again crosses the present one below lock No. 11, the water of both canals at this point being at an elevation of 382 feet above sea level.

The proposed canal enters Lake Ontario at the mouth of the Ten Mile Creek about three miles east of Port Dalhousie, the entrance to the present canal. The total length of canal from lake to lake is 25 miles, and the difference in level between the two lakes, 325½ feet, is to be overcome by seven lift locks, each having a lift of 46½ feet. The dimensions of the locks are to be 800 feet in length by 80 feet in width in the clear and with 30 feet of water over the mitre sills at the extreme low stages in the lakes. The width of the canal at the bottom will be 200 feet and for the present the canal reaches will be excavated to a depth of 25 feet only, but all structures will be sunk to the 30 foot depth, so that the canal can be deepened at any future date by the simple process of dredging out the reaches.

A new spur on the western breakwater, consisting of an immense rubble mound of stone from the excavation north of Port Colborne, and terminating in a timber and concrete head-block, located some 2,000 feet farther out in the lake than the present breakwater, will be built to insure quiet water in Port Colborne harbor during storms, which is not the case now, the present breakwater not being far enough out in the lake to deaden the swells.

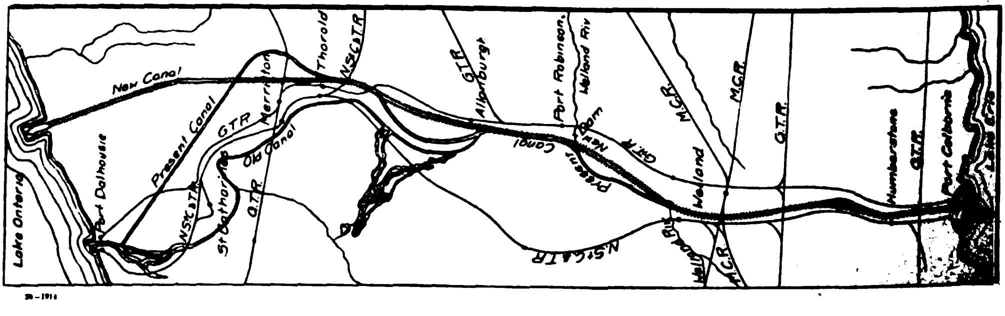
The outer harbor at Port Colborne has now a 22-foot depth of water at ordinary stages of the lake, which is as much as is available at most of the lake ports and in the channels connecting the lakes at the present time, and the deepening of this portion of the harbor may be left for a few years until the connecting channels in the lakes allow deeper navigation.

The inner harbor at Port Colborne will be deepened to the proposed new depth and the old locks and regulating weir now in the centre of the village will be entirely removed. The rock cut from Port Colborne to Humberstone will be deepened and widened on the west side, and just below Humberstone a thorough cut will be made across the point now forming Ramey's Bend to materially straighten the canal. The materials from these cuts will be nearly all rock, and will be used to form the breakwater previously mentioned. A guard lock will be built in the rock cutting a short distance below Humberstone, and when this new cutting is ready for navigation a regulating weir will be built across the abandoned portion of the present canal which will be used as a by-pass to furnish water to the canal. This lock and regulating weir will control the elevation of the summit level of the canal, which it is proposed to keep at the level of extreme low water in Lake Erie, viz., 568 feet above sea level.

From Ramey's Bend to Welland the canal will be deepened and widened by excavating a strip along the western bank. Instead of building a new aqueduct at Welland to carry the canal over the Welland river, it is proposed to raise the level of the river to that of the summit level of the canal, viz., 568 feet above sea level by means of a dam across the river at Port Robinson. This dam will be provided with a large overflow and regulating weir which will control the elevation of the summit level, allowing any surplus water to overflow into the old Welland river and pass out into the Niagara River at Chippawa as at present, a sufficient quantity of water will be allowed to run constantly to keep the river clean.

The present aqueduct at Welland will be dredged out, also the bank between the canal and the river, which latter will be utilized between Welland and Port Robinson instead of the present canal, being somewhat straighter and entailing considerably less excavation. At Port Robinson a cut will be made through the present bank between the canal and the river through which vessels will again enter the canal prism.

The raising of the Welland River above Wel-



Map of the Proposed New Welland Ship Canal Between Lake Ontario and Lake Erie.

land will flood some 1,600 acres of low land adjoining the river bed. This land is flooded every spring by the flood water in the river and is principally used for pasturage. The township of Wainfleet adjoining the Welland River on the south side, consists principally of low lying ground which drains into the Welland River, and to prevent damage to this land on account of the raising of the river, it will be necessary to open up most of the ditches from the point of their present entrance to the river to the intended high water mark.

The turning of the Welland River into the canal will pollute the waters which are at present used by the towns of Welland, Thorold and Merritton, and by the city of St. Catharines for domestic purposes. This may necessitate the construction of extensive filtering plants, which scheme is not looked upon with favor by those interested. An alternative scheme to lay a pipe line from Lake Erie to the reservoirs of the different municipalities, through which clean water would be continuously pumped, is under consideration, and appears to be the most feasible scheme available.

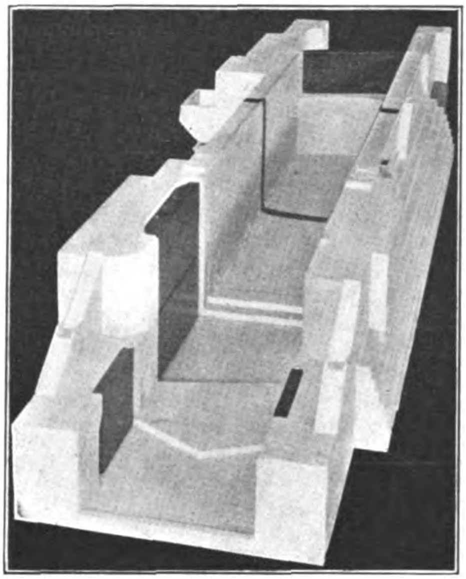
Between Port Robinson and Allanburg what is known as the deep cut (deepest cutting 80 feet) will be deepened and widened by cutting a slice off the western bank. Allanburg is now the junction of the present and old Welland canals, and the water required for the latter, which is quite considerable on account of the numerous power developments along it, is taken into the canal through a weir at this point.

In connection with the construction of the ship canal, it is proposed to close the present old canal entirely between Allanburg and Marlatt's Bridge near Thorold, first building a new weir at the head of lock No. 25 of the present canal to supply the above mentioned water. A dam will then be thrown across the old canal at Allanburg, and the old bed of the canal between the dam and Marlatts Bridge will be utilized as a dumping ground in which to place the material removed from above water in widening the deep cut. This will form a very convenient dumping ground, and the old canal will become more self-contained, as at present the entrance works are situated at an inconvenient distance from the remainder of the canal.

If it is desired to continue navigation on the old canal, entrance may be had to it through lock No. 25 of the present canal when the ship canal is completed by making a short cut through the bank separating the two waterways.

A pair of twin guard gates are located on the proposed canal near the southerly limits of the town of Thorold, and a short distance north of them is located lock No. 7, the head of this lock being directly opposite the head of lock No. 24 on the present canal. That portion of the present canal between locks Nos. 24 and 25 together with a pond of about 27 acres formed by flooding the upper valley of Ten Mile Creek will be utilized as a regulating basin from which water to fill lock No. 7 will be drawn. This method of drawing water from a side pond instead of directly from the canal above avoids the formation of objectionable currents and surges in the canal and locks, and is the method adopted for filling all of the locks.

Below lock No. 7 is a short reach of canal with an adjacent side pond or regulating basin having a surface area of about 84 acres, and immediately below are located twin locks Nos.6, 5 and 4 in flight. These three locks overcome a descent of 139½ feet. One flight will be used for down bound vessels and the adjoining flight for up bound, a double flight being required to save long delays in the passage of vessels through the canal.



Model of Lock for the Proposed New Welland Ship Canal.

The main line of the Grand Trunk Railway between St. Catharines and Niagara Falls will cross over the foot of twin locks No. 4 by means of two short Bascule lift bridges.

The Welland division line of the Grand Trunk Railway is situated just where the new locks are to be built, and it will be necessary therefore to divert it some distance to the west, and the diverted line will bear the same relation to the proposed canal as the present lines does to the present canal, following up on the west side of the locks, but remaining on the west side of the canal for some distance above the present lock No. 25, when it crosses over the proposed canal on a Bascule lift bridge to the east side.

From lock No. 4 the proposed canal crosses the meadow to the north, following in part the bed of the Ten Mile Creek till it croses the present canal at the foot of lock No. 11 at an elevation of 382 feet above sea level, which is the level of the present canal at that point. This will enable small vessels which wish to do so, to use the Port Dalhousie entrance as at present, as far as lock No. 11.

Lock No. 3 is located immediately north of the present canal, and at its head on the east side is situated an equalizing basin or pond of 150 acres. Below No. 3 a heavy cutting is requided through the village of Homer to the bed of the Ten Mile Greek again, above Carleton street, and just below Carleton street lock No. 2 is located. It was difficult to find a location for this lock on account of lack of rock for a foundation, but eventually a suitable foundation was found at the present site. The canal at the head of lock No. 2 is at an elevation of 335½ feet above sea level, and floods about 200 acres of land in and adjoining the bed of Ten Mile Creek. Below lock No. 2 the canal follows the bed of the creek to lake lock No. 1 being situated just below the lake road. The pond at the head of lock No. 1 covers an area of 107 acres.

The outer entrance piers in Lake Ontario are placed about one and one half miles from shore, where the depth of water is 30 feet. A wide channel will be dredged from these piers to lock No. 1. The sides of this channel will be protected near the shore end by reinforced concrete cribs with concrete superstructure, alongside which vessels may lie. From the shore line of the lake to the outer entrance piers an embankment about 500 feet in width will be formed on either side of the channel from materials excavated from the canal between the lake and Thorold.

For the purpose of conveying this material from the different contracts to the lake, the Department will build a double track railway along the west side of the canal from the foot of the flight of locks near Merritton to the lake, and temporary trestles will be built out in the lake on either side of the harbor from which to start the dumps. The railway will also be utilized to haul crushed stone from the site of the flight of locks to locks Nos. 1, 2 and 3, where it will be used for the purpose of making concrete.

The contractor for the rock excavation from the site of the flight of locks will, under his contract, be obliged to crush a sufficient quantity of the good rock taken from his excavation to supply all the crushed stone required for making all the concrete for the different locks and structures.

The lock walls will be 82 feet high above the top of the gate sills and including the necessary foundation work required below this level two of the locks will have walls 100 feet high.

The lock gates will be of the single leaf type, swinging on a hinge at one side of the lock, and resting when closed on a notch cut in the opposite wall, a single leaf thus spanning the whole width of the lock chamber. The gate at the foot of each lock will be 83 feet in height and 88 feet in length, and will weigh about 1,100 tons.

The valves and culverts in the walls are of large dimensions and will permit of the lock being filled in less than eight minutes. This will mean that the time of passing through the canal will be very much reduced below that required at present.

The canal will be divided into nine sections for contract and construction purposes.

The contractor for each section will be required to supply all plant and labor to efficiently carry ou the work of excavation and the construction of all structures such as locks, weirs, substructures or bridges, entrance piers, etc. He will also supply all necessary materials required in the construction of the above excepting Portland cement and certain metal work which will be furnished by the Department.

The furnishing of Portland cement to the contractors has been found a very satisfactory method on other contracts with the Department and this method will be adopted in all contracts on the ship canal.

All steel and iron castings and other metal work which is standard for all locks, etc., will also be furnished to the different contractors to be placed in position in the concrete masonry of locks, weirs, bridges, etc.

The building and erection of the lock gates will form a separate contract.

The steel superstructure of bridges will be built under separate contracts.

The following estimated quantities will give an idea of the magnitude of the work:

Rock excavation	6,000,000 cubic yards
Earth excavation	40,000,000 cubic yards
Concrete	2,500,000 cubic yards

A careful and conservative estimate places the total cost of the work at less than $50,000,000.

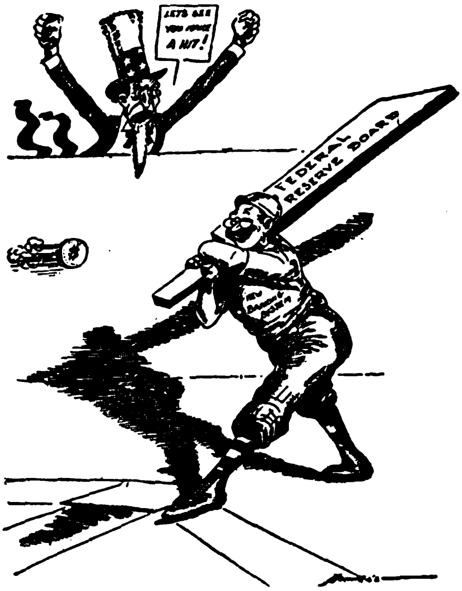
The canal should be ready for navigation in five years.

Financial

Recent Developments.

RECENT developments have been such as to give grounds for some encouragement. The perplexing problem at this time relates, of course, to the re-opening of the security markets of the country. What is needed at the present time is the establishment of a trade credit balance great enough to cover Europe's sale of stocks and bonds which will undoubtedly be very heavy as soon as our markets are re-opened.

It is extremely unfortunate, under such circumstances, that the Interstate Commerce Commission has found it impossible to act more promptly in connection with the carriers' appeal for a re-opening of the five per cent advance rate case. A prompt settlement of this case in favor of the carriers would undoubtedly prove the greatest single factor in restoring national



The New Player at Bat. —St. Louis Globe-Democrat.

confidence and permitting a resumption of financial transactions. The pressure from abroad will prove extremely severe as soon as the bars are let down, but with the railroads in a position to reasonably protect their credit, the situation would not prove nearly so threatening.

The real trouble which is sapping the nation's vitality at the present time, may be classified under the single head of "Bureaucracy." Great business enterprises in various fields are either suffering from this disease or are so afraid of catching it, that stagnation is the almost universal result. A reaction is bound to set in, however, and in the manifest desire of the Interstate Commerce Commission to treat the railroads more liberally, may be found what is hoped to be the turning in the lane which has proved altogether too long for the business interests of the country.

In the meantime the railroads are marking time. Improvements are being held up, new equipment bought only under the most imperative necessity and the question of new construction absolutely side-tracked for the time being. A five per cent increase in Eastern rates, however, together with corresponding assistance for the Western roads, would put an entirely new complexion upon the outlook and would infuse new life into the now stagnant arteries of trade. While conditions at Washington are still ominous with reference to the so-called trust legislation, big business has about made up its mind to bow to the inevitable and to accept its chastisement without permitting it to unnecessarily upset its equilibrium. An encouraging development is the greater optimism found on all sides and the determination to re-establish that progress and prosperity to which this country is entitled. It is the day for the strong man, and the complaints of the weak are becoming more indistinct as the influence of his stronger brother is becoming more generally felt.

While this nation is not yet out of the woods, so far as the effect of the European war is concerned, it can; with its magnificent resources and its splendid citizenship, meet the issue unflinchingly. Whatever the duration of the war, Europe is already beginning to feel it in a tremendous slackening of its productive powers, and the demands upon the United States for its products, may be expected to increase very rapidly from now on. This, in itself, should give us the trade balance so highly desirous under the circumstances, and place us in a position where we can successfully finance the heavy European demands which are sure to fall upon our shoulders as the result of the war.

The most encouraging recent development is the fact that our trade with a number of foreign countries has been resumed in such proportions as to make our exports, particularly of foodstuffs, equal, if not in excess of the movement for the corresponding period of last year. This as already pointed out is only the beginning and is sure to create a greater feeling of confidence when its significance is more fully appreciated by the American people. Strange as it may seem, the tariff issue has become practically dead for the time being, as the European war, with its after-effects, is likely to create and sustain such a demand for American products of all kinds, and at the same time to slacken Europe's ability to supply us with its own products, as to make a consideration of the tariff as a pressing political issue, a matter of comparative small present importance.

The Maturing Obligations of the Railways.

BETWEEN now and the end of next year, the railways will have to face the maturity of between $500,000,000 and $600,000,000 of bonds and short term notes. Even before the outbreak of the war, with railway earnings in their present shape, the taking care of these obligations was one of the most serious questions confronting the carriers. The war has, of course, greatly emphasized this difficulty and as the President's Committee put it to the Nation's Chief Executive, the transportation industry at the present time "is confronted with an emergency of a magnitude unparalleled in history."

Restoration of railway credit is the vital necessity of the hour. Without immediate and liberal assistance from regulative authorities, the railway industry would soon be upon the rocks. Investors, even before the war, were fighting shy of railway securities and it takes little imagination to appreciate what their attitude must be at the present time. Another important consideration is the rise in the cost of capital which the war is certain to bring about. High rates of interest are likely to be current for some time to come and with a narrowing margin of profits and practically no surplus, it would take a Solomon to determine how maturing obligations are to be met. As the Boston "Evening Transcript" puts it:

"All that will mean that whereas a railroad enjoying good credit previously may have been able to get money at five per cent it will now have to pay six or seven. As to the inducements which roads not in good standing with the investment public will have to make to get rid of any securities they may have to sell, that is unpleasant to think about. Certainly it will have a marked effect on their net earnings for a good while. Cost of capital like the cost of anything else in running a railroad is an item bearing directly on profits. It is just as logical for the railroads to ask for a further increase in freight rates because the capital they use costs them more, as it is to ask for it because there has been an advance in the cost of materials and labor."

Gross Net Earnings for the Half Year.

THE statement issued by the "Commercial and Financial Chronicle" shows that there was a diminution in the gross earnings of American railroads for the first six months of the present calendar year as compared with the first six months of 1913, of $85,033,426, or 5.72 per cent. While there was a loss in net by a similar comparison of $50,660,208 or 12.82 per cent. To appreciate the full significance of this contraction which, in net, is at the rate of over $100,000,000 a year, it is only necessary to recall that the capital obligations of the railroads are at all times being augmented to provide for the growing volume of traffic and an actual increase in net earnings is necessary merely to keep the railroads on an even keel in the matter of the relation of dividend and interest charges to income. It is peculiarly significant at the present time that the bulk of this whole loss in net income comes from the roads who recently made application to the Interstate Commerce Commission for a five per cent increase in freight rates and failed in their effort.

The following table presents comparisons for the first half year for a long series of years. It shows a poorer result for the first six months of 1914 than for any other year with the single exception of 1908.

Year	Net Earnings. Year Given	Year Preceding	Increase or Decrease
Jan.	$	$	$
1897	121,059,320	115,427,318	+5,632,002
1898	139,585,717	121,895,682	+17,690,035
1899	150,599,074	140,545,535	+10,053,539
1900	180,718,437	155,591,468	+25,126,969
1901	206,218,320	179,495,140	+26,723,180
1902	209,973,703	202,250,797	+7,722,906
1903	218,024,056	198,256,826	+19,767,230
1904	198,807,547	224,157,420	-25,349,873
1905	234,333,810	215,417,468	+18,916,342
1906	272,101,047	226,345,855	+45,755,192
1907	280,697,496	261,423,946	+19,273,550
1908	231,254,071	294,738,973	-63,484,902
1909	371,591,341	294,951,102	+76,640,239
1910	408,380,483	371,562,668	+36,817,815
1911	378,852,053	404,569,430	-25,717,377
1912	373,370,171	375,407,648	-2,037,477
1913	400,242,544	373,442,875	+26,799,669
1914	343,835,677	394,495,885	-50,660,208

Railroad Gross Earnings for August.

THE preliminary statements of railway gross earnings for August as prepared by the New York "Commercial and Financial Chronicle" shows a decrease for the month of $4,955,479 as compared with the earnings of the same month of 1913. The ratio of last year is 6.37 per cent.

While the shrinkage appears moderate, in view of the conditions, it becomes more significant when it is understood that the grain carrying roads which, with the cotton carrying roads, are the lines chiefly represented in the "Chronicle's" tabulation, had the advantage of a much heavier grain movement this year, and also that the returns for 1913, with which the comparison is made, were of a poor or indifferent character. In other words, the "Chronicle's" early statement for the last year showed a gain of only $71,670. The following table shows the increases or decreases in gross earnings during August for a series of years.

August.		Gross Earnings Year Given.	Year Preceding.	Increase(+) or Decrease(-).	
Year.	Roads	$	$	$	%
1896	120	38,801,525	40,010,144	-1,208,619	3.02
1897	118	43,190,342	38,526,399	+4,663,943	12.62
1898	121	46,632,848	44,446,940	+2,185,908	4.92
1899	112	54,751,100	48,325,106	+6,425,994	13.29
1900	105	57,143,176	53,731,004	+3,412,172	6.35
1901	96	65,155,714	57,439,471	+7,716,243	13.43
1902	76	58,887,908	56,213,712	+2,674,196	4.75
1903	76	72,505,067	66,411,069	+6,093,998	9.17
1904	67	59,445,529	57,494,231	+1,951,298	3.39
1905	56	58,859,481	55,955,430	+2,904,051	5.19
1906	68	79,344,748	70,099,249	+9,245,499	13.19
1907	67	86,377,190	79,029,051	+7,348,139	9.30
1908	52	59,649,837	70,341,817	-10,691,980	15.20
1909	49	57,953,811	51,851,211	+6,102,600	11.77
1910	46	62,005,137	56,405,033	+5,600,104	9.90
1911	50	71,282,467	69,057,069	+2,225,398	3.22
1912	47	77,638,413	71,361,692	+6,276,721	8.79
1913	46	77,975,309	77,903,639	+71,670	0.09
1914	47	73,690,353	78,645,832	-4,955,479	6.37

Annual Report of Chicago and North Western.

THE report of the Chicago & North Western Railway Company for the year ended June 30, 1914, shows net earnings of $24,271,909, a decrease of $511,231 from the preceding year. The total operating expenses for the year were $59,405,141, of this amount $12,179,689 was for charges pertaining to the maintenance of way and structures. The ratio of operating expenses to gross revenue advanced to 70.99 per cent from 70.15 per cent the preceding year. The income account for the fiscal year compares as follows:

	1914	Increase
Total operating rev.	$83,677,050	$641,129
Operating expenses	59,405,141	1,152,361
Net rev.—Rail operations	24,271,909	*511,231
Outside oper.—Net deficit	14,149	25,446
Net railway oper. rev.	24,257,759	*536,677
Railway tax accruals	4,252,790	655,630
Railway operating income	20,004,969	*1,192,308
Other income	2,920,760	*542,731
Gross income	22,925,729	*1,735,039
Deductions from gross income	10,619,587	833,831
Net income	12,306,142	*2,568,871
Sinking funds	200,472	481
Dividends—		
8% on preferred stock	1,791,600	......
7% on common stock	9,108,015	......
Balance to profit and loss	1,206,054	*2,569,353

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*Decrease.

Annual Report of the Philadelphia and Reading Coal and Iron Company.

THE year ended June 30th, shows heavy decreases in gross and net earnings. Iron earnings were $32,703,982, a decrease of $8,279,081. Net operating profit was $848,367, or $2,938,551 less than in the previous year. After the payment of fixed charges, the surplus left was $715,390 a decrease of $424,202.

President W. J. Richards in his annual report says:

"The total production of anthracite coal from the lands owned, leased and controlled by the company for the year ended June 30, 1914, was 10,271,669 tons, as compared with 12,807,996 tons mined during the previous year, a decrease of 2,536,327 tons or 19.8 per cent.

"During the year the company mined 8,992,494 tons, a decrease of 2,097,248 tons or 18.91 per cent; purchased 218,957 tons and sold 8,747,643 tons, a decrease of 2,000,959 tons, or 18.62 per cent as compared with the previous year.

"The percentage of sizes above pea produced from the mining operations was 59.35 per cent as compared with 59.92 per cent the previous year."

The new state tax on coal mined obligated the company, from June 28th to December 31, 1913, to pay about $320,000.

Annual Report of the Chicago, Indianapolis and Louisville.

THE annual report of the Chicago, Indianapolis & Louisville for the year ended June 30, 1914, has been issued.

Gross operating revenues per mile of road were $11,237, a decrease of $92 from that of 1913; and net operating revenues per mile were $2,847, a decrease of $205.

In the remarks it is stated that the dividend payable on the common stock July 1st, was not declared, because of the unsettled conditions, but that it is expected that the payment will be resumed at an early date. The report further says that, in pursuance of the policy of continuous development and improvement of property, the expenditures of additions and betterments during the year amounted to $844,510, as compared with $1,427,966 the previous year.

Annual Report of the Reading Company.

THE Reading Company has issued its pamphlet report of the year ended June 30, 1914. The income statement shows net earnings of $16,816,968, against $15,892,261 the preceding year. The surplus after charges was $11,322,062, which, after allowing for dividends on the first and second preferred stocks, was equal to 12.17 per cent on the common stock outstanding, as compared with 11.19 per cent earned the year previous. The condensed income account compares as follows:

	1913-14	1912-13
Receipts	$16,919,118	$15,997,121
Expenses	102,149	104,859
Net earnings	$16,816,968	$15,892,261
Interest, taxes, etc.	5,494,906	5,258,331
Surplus for year	$11,322,062	$10,633,930

Annual Report of the Minneapolis, St. Paul and Sault Ste. Marie Railway.

THE Minneapolis, St. Paul & Sault Ste. Marie Railway has issued its annual report for the year ended June 30, 1914. The income account of the Minneapolis, St. Paul & Sault Ste. Marie Railway Company proper (not including the Wisconsin Central) shows net earnings of $6,508,462 and surplus of $2,853,502. After deducting seven per cent dividends on $12,603,400 preferred stock, the balance, $1,971,264 was equal to 7.82 per cent on the $25,206,800 common stock, as compared with 18.42 per cent earned last year. The income account compares as follows:

	1914.	1913.
Total oper. revenue	$18,717,689	$21,410,672
Operating expenses	12,209,228	12,096,215
Net revenue	$6,508,462	$9,314,457
Other income	1,083,244	871,051
Total income	$7,591,705	$10,185,508
Charges, taxes, etc.	4,738,203	4,658,093
Surplus	$2,853,503	$5,527,415

Annual Report of the Norfolk & Western.

NORFOLK & WESTERN was one of the few railroads to increase its gross revenues in 1914, the gain amounting to $730,698. This, however, was wiped out by a $1,370,028 increase in operating expenses. As a result net operating revenue decreased 4.2 per cent or $639,330.

After spending a slightly greater percentage of gross revenues than ever before on maintenance of property, the road earned six per cent dividend requirements with a margin of $3,108,000 to spare, equal to 2.6 per cent on the amount of common stock outstanding. Common share balance of 8.6 per cent compares with 10.1 per cent in the 1913 year, and 9.9 per cent in 1912.

Total maintenance appropriations were $14,212,619, compared with $13,879,591 in 1913, consuming 31.96 per cent of gross against 31.73 per cent. Details which will be shown below show that upkeep per unit of motive power and rolling stock (except in case of passenger cars) has increased in amount steadily in recent years. Maintenance of way per mile of road is second only to 1913 figures.

The inevitable increase in costs resulted in an advance in the ratio of transportation expenses to 31.64 per cent, from 30.16 per cent in 1913 and 29.62 per cent in 1912.

A four-year comparison of maintenance and transportation costs is presented below:

	1914	1913	1912	1911
Gross	$44,470,619	$43,739,921	$39,735,237	$35,557,522
Maint	14,212,619	13,879,591	12,492,842	10,967,550
Percent	31.96	31.73	31.44	30.84
Transp. exp.	14,068,577	13,192,922	11,771,800	10,672,624
Percent	31.64	30.16	29.62	30.02
Net income	12,894,903	13,714,499	12,635,398	11,269,263

Norfolk & Western has about cleaned up its losses occasioned by the floods of March, 1913, and in the 1914 year charged off $671,000 to operating expenses on this account.

Annual Report of the St. Paul.

THE report of the Chicago, Milwaukee & St. Paul Railway Company for the year ended June 30, 1914, shows net earnings of $30,452,629, a decrease of $747,457. The gross revenues for the year were $91,782,690, a decrease of $2,301,363, compared with the previous year. The revenue from freight traffic was $65,266,420, a decrease of $2,697,740, or 3.97 per cent. The number of tons of freight carried was 33,007,277, a decrease of 5.17 per cent. The revenue from passenger traffic during the year was $18,961,224, an increase of $504,089, or 2.73 per cent.

The income account for the fiscal year compares as follows:

	1914.	Decrease.
Operating revenues	$91,782,690	$2,301,364
Operating expenses	61,330,061	1,553,906
Net oper. revenue	$30,452,629	$747,457
Net rev.—Outside oper's	260,483	*85,735
Total net revenue	$30,713,112	$661,722
Taxes accrued	4,106,557	*282,724
Operating income	$26,606,555	$944,447

*Increase.

Annual Report of the Atchison, Topeka and Santa Fe.

IN the fiscal year ending June 30th, last, the Atchison, Topeka and Santa Fe lost $5,786,482 in gross earnings, as compared with the year previous. The citrus fruit crop of California did much to keep earnings as high as they were.

Decreases of over $4,000,000 in operating expenses in the year greatly eased the effect of the loss in gross earnings. The company curtailed wherever possible. An increase of $863,000 in taxes, however, brought the loss in net earnings up to almost $2,500,000.

On $105,000,000 common stock, the company earned approximately 7.5 per cent in the year, as compared with 9.49 per cent on $190,836,500 common stock the year before. Bond conversions during the past year were comparatively small. On the basis of the share balance for the past fiscal year, Atchison had a margin of about $2,925,000, after all dividend payments, against $6,000,000 in 1913.

In the last few months of the fiscal year, the margin between gross earnings and those of last year, was narrower, and in June an increase of $650,000 was reported. This gain was an indication of what might have been expected in the current months, and in the months to come. What effect the European war may have on the volume of moving tonnage, remains to be seen.

Atchison increased its average mileage operated in the last fiscal year to 10,908 miles, a gain of 158 over the year before. In the past five years, 1,113 miles have been added to the system, an average of 223 miles a year. The mileage added last year was principally on account of construction begun in the year before, and represented more than anything else the completion of old contracts. Little new work was undertaken, and the management has nothing of size now planned.

Annual Report of the Denver and Rio Grande.

THE report of the Denver & Rio Grande Railroad Company for the year ended June 30, 1914, shows net earnings of $7,148,855, as compared with $7,405,793 the previous year. The balance available for dividends was $1,400,375, equal to 2.81 per cent on the preferred stock, against 4.2 per cent earned the year before. The income account compares as follows:

	1914.	1913.
Total operating revenue	$23,167,051	$24,452,965
Operating expenses	16,018,196	17,047,172
Net oper. revenue	$7,148,855	$7,405,793
Outside operations, net	16,148	6,495
Total net revenue	$7,132,707	$7,399,298
Taxes	1,009,142	948,739
Operating income	$6,123,563	$6,450,560
Other income	1,262,934	1,247,938
Total income	$7,386,498	$7,698,498
Interest and rent	5,986,122	5,604,318
Net income	$1,400,375	$2,094,180
Sinking and renew fund	263,889	247,808
Additions & betterments	80,927	389,000
Balance	$1,055,559	$1,457,372

President B. F. Bush says: "The revenue from freight traffic decreased $1,020,059, or 5.64 per cent largely attributable to the protracted coal strike in Southern Colorado, fruit crop failure on the Western slope in Colorado and inactivity in the building industry reducing the demand for lumber from Southern Colorado and New Mexico territory.

Annual Report of the Lehigh Valley Railroad.

THE report of the Lehigh Valley Railroad Company for the year ended June 30, 1914, shows net earnings of $12,174,402, a decrease of $1,761,150 from the preceding year. Operating expenses showed a decrease of $1,498,658, but the ratio of expenses to gross earnings advanced to 69.40 per cent from 67.62 per cent the year previous. The revenue from express business was reduced by $62,219.

The report of the Lehigh Valley Coal Company for the same period shows a total net income from all sources of $564,859, a decrease of $906,415. This shrinkage in earnings, says the report, was due almost entirely to the restricted demand for anthracite coal as a result of the mild winter.

The income account of the railroad company for the fiscal year compares as follows:

	1914	Decrease.
Operating revenue	$39,783,564	$3,259,808
Operating expenses	27,609,162	1,498,658
Net oper. revenue	$12,174,402	$1,761,150
Outside op. deficit	280,244	34
Total net revenue	$11,894,158	$1,761,183
Ry. tax accruals	1,549,895	*102,690
Oper. income	$10,344,263	$1,863,874
Other income	2,864,272	*560,518
Total income	$13,208,535	$1,303,356
Misc. charges	6,157,875	*401,812
Net income	$7,056,660	$1,705,168

*Increase.

Annual Report of the Chicago Great Western Railway.

THE preliminary income statement of the Chicago Great Western Railway Company for the year ended June 30, 1914, shows net earnings of $3,429,354, against $3,740,476 the preceding year. The surplus after charges was $895,930, equal to 2.18 per cent on the preferred stock outstanding, as compared with 3.3 per cent earned the year previous. The income account compares as follows:

	1914	1913
Total operating revenue	$14,260,522	$14,000,618
Other expenses	10,831,168	10,260,142
Net operating revenue	3,429,354	3,740,476
Outside operations	*3,249	2,293
Total net	3,426,105	3,742,769
Taxes	499,082	439,419
Operating income	2,927,023	3,303,350
Other income	146,140	118,475
Total income	3,073,163	3,421,825
Charges hire, equip. etc.	2,177,233	2,176,786
Surplus	895,930	1,245,039

*Debit.

Annual Report of the New Haven System.

ALL but four companies in which the New Haven Railroad is interested earned their fixed obligations in the year ending June 30, 1914, report of which has just been issued. These four companies are the New England Steamship Company, the Berkshire Street Railroad Company, the New York & Stamford Railway Company and the New York, Westchester & Boston Railway Company. The total deficit in net corporate income of these companies is $403,057.74. A total surplus of net income of the other companies is $3,244,820.20. Deducting the total deficit, there is a total surplus of $2,841,762.46.

The companies that show a surplus of net corporate income are New York, New Haven & Hartford Railroad Company, $268,662.87; Central New England Railway Company, $230,020.98; New York, Ontario & Western Railway Company, $663,692.06; Hartford & New York Transportation Company, $85,965.42; New Bedford, Marthas Vineyard & Nantucket Steamboat Company, $62,708.25; The Connecticut Company, $1,501,072.42; The Rhode Island Company, $347,642.94; Westchester Street Railway Company, $4,883.99; Housatonic Power Company, $78,506.49; Westport Water Company, $1,664.78.

The amounts of the deficits of the four companies are: New England Steamship Company, $77,802.62; Berkshire Street Railway Company, $72,507.17; New York & Stamford Railway Company, $5,824.17; New York, Westchester & Boston Railway Company, $246,923.78.

The report says: "The fiscal year ending June 30, 1914, has been a difficult one for all transportation companies and particularly for those in New England."

It also explains that "net corporate income represents the amount available for the payment of floating debts, additions and improvements necessary but unproductive or only partially productive (like new stations), and therefore preferably payable out of income rather than from new capital and for dividends."

From the report as issued it is not possible to do more than contrast the figures of 1914 with those of 1913, and these show a tremendous falling off in both net and gross income in some of the properties and in others an improvement over the previous year is shown.

The biggest drop is in the New York, New Haven & Hartford Railroad Company, which showed a net corporate income in 1913 of $8,922,237.72, as against $268,662.87 for 1914. The operating revenue of this company, including net results of outside operations, for 1914, was $66,703,172.85. The operating expenses and taxes were $52,703,172.85, leaving an operating income of $14,619,604, added to other income for $7,247,989.90 shows a gross income of $21,867,593.90. From this is deducted interest, rentals, etc., amounting to $21,598,931.03, leaving a balance of net corporate income of $268,662.87.

The greatest falling off in this company appears to be under the head of "other income." In 1913 "other income" was $10,063,784.78. In 1914 it was $7,247,989.90. The item of "interest, rentals, etc.," was greater by $2,140,538.64 in 1914 than in 1913, so that the total loss by increase and decrease in these two items is nearly $6,000,000. In addition to that there was a falling off in "operating revenue, including net revenue of outside operations," of $2,555,777.43.

There is a falling off of almost 75 per cent in the net corporate income of the Central New England Railroad Company. In 1913 it was $914,416.36 and in 1914 it was $230,020.98.

There has been a falling off of almost 50 per cent in the net corporate income of the Central New England Railroad Company. In 1913 it was $914,416.36 and in 1914 it was $230,020.98.

There has been a falling off of almost 50 per cent in the net corporate income of the New York, Ontario & Western Railway Company.

In 1913 it was $1,211,633.01 and in 1914 it was $663,692.06.

Annual Report of the Missouri Pacific.

THE income statement of the Missouri Pacific System for the year ended June 30, 1914, shows net earnings of $14,984,731, a decrease of $964,424. The income account in condensed form for June and the twelve months compares as follows:

	1914.	Decrease.
June gross	$4,687,130	$37,693
Net after taxes	1,102,681	84,205
Other income	306,618	73,424
Total income	1,409,299	157,830
Twelve months' gross	59,793,900	2,361,605
Net after taxes	14,084,731	964,424
Other income	2,447,779	15,819
Total income	16,532,510	980,244

Annual Report of the Seaboard Air Line.

SEABOARD AIR LINE RAILWAY'S operating results are to a high degree satisfactory.

Gross revenues the past fiscal year, a period when railroad gains were the exception, showed an increase of $763,000 over 1913 and of $2,370,000 over 1912. Net earnings after taxes in 1914 were $135,000 higher than in 1913 and $1,256,000 ahead of 1912. Total available income for fixed and other charges was $214,000 ahead of 1913 and $1,300,000 ahead of 1912. In three years available income has increased more than twice as fast as fixed and miscellaneous charges.

The following comparisons show available income, including "other income," and fixed and miscellaneous charges for the past three years.

	1914	1913	1912
Total available inc..	$7,280,359	$7,066,315	$5,908,195
Charges:			
Lease of other roads	51,000	51,000	51,000
Hire of equipment .	269,426	228,637	201,098
Joint facility rents .	101,760	103,319	94,227
Miscellaneous rentals	19,658	14,643	15,012
Interest funded debt	3,535,632	3,272,314	3,146,904
Int. Eq. Tr. Oblig's.	354,166	328,111	288,987
Int. unfunded debt..	4,136	56,134	24,836
Outside operations .	20,360	26,314	22,686
Total charges ..	4,356,144	4,080,462	3,844,750
Surplus	2,924,216	2,985,854	2,063,444
Int. adjust. inc. bonds	1,250,000	1,250,000	1,249,658
Final surplus	1,674,216	1,735,853	813,786

The 1914 surplus is equivalent to 7.00 per cent on the preferred stock outstanding, which compares with 7.26 per cent in 1913 and 3.40 per cent in 1912.

Although the actual stock earnings were slightly under those of the preceding year, this is due to the fact that fixed interest charges last year included a year's interest on the $6,000,000 notes which the company sold to provide for its requirements for the next three years and which will be spent during that period. The actual increase in interest on funded debt for this account was about $250,000, but apparently the end has justified the extra burden for any railroad that is financed for the next two years is in an extraordinarily favorable position in view of the financial situation brought about by the war in Europe.

Operation

Fire Organization on Baltimore and Ohio.

BY virtue of a circular issued by the Baltimore and Ohio Railroad to its employes, the men working for that company are to be constituted into a vast organization of fire-fighters, ready for emergency service in protecting the property of the public and that of the railroad against destruction by flames.

Employes in train service and others whose duties require them to travel over the property are urged by the management to maintain a constant vigil against fire, either on the property of the railroad's neighbors or along its own right-of-way. Suggestions concerning precautions against fires are requested of the employes.

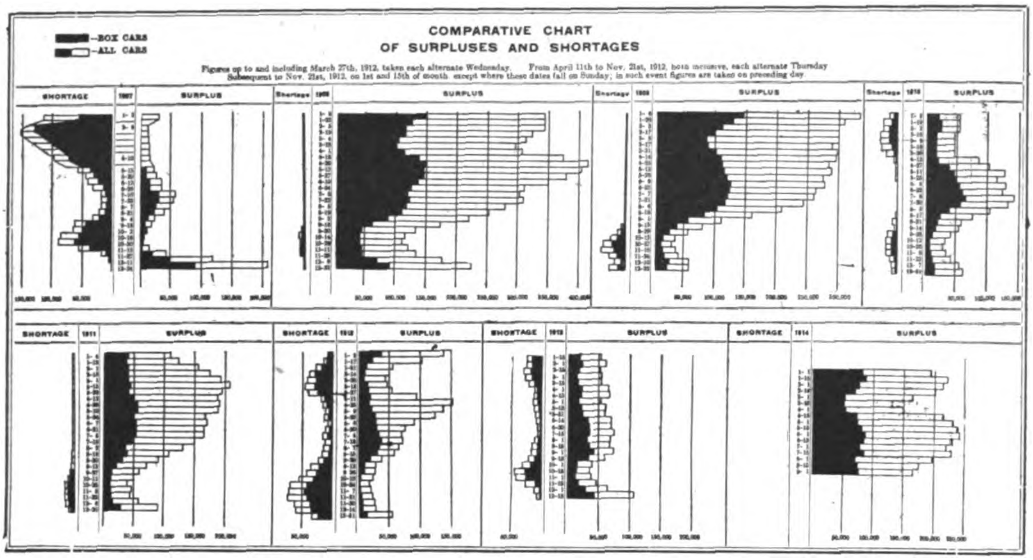
In the event that fires be discovered by engineers, conductors or other employes in train service, they are pre-emptorily authorized by the company to lend assistance in extinguishing the blaze; but the regulation requires that in such emergency any delay occasioned by assisting in putting out a fire must be reported at the first telegraph station.

While the regulation concerning the suppression of fires has in view primarily the protection of railroad property, the Baltimore and Ohio urges its men to take a broad interest in the communities in which they reside so that at all times they may render assistance of direct benefit to society. In the cities and towns, division points and terminals the railroad has provided fire-fighting apparatus for the use of employes in emergency cases, and to increase the efficiency of such protection the men are drilled in order that they keep themselves on the alert. Numerous instances have been reported of railroading forces preventing serious fire destruction.

The campaign waged by the Baltimore and Ohio against fire losses extends beyond the employes to the mechanical operations of the property. Locomotive stacks have been equipped with spark nettings to prevent particles of fire from being scattered along the right-of-way or on adjoining property and the fire grates in the engines are so designed that hot coals are not dropped along the tracks. In the ends of sidings, where locomotives usually stand when waiting to pass trains, wooden ties have been replaced by steel ties for the prevention of fire.

The Car Situation.

THE last report of the American Railway Association on car surpluses and shortages shows that on September 1, 1914, there were 165,244 idle cars as compared with 174,260 on August 15, 1914 and 73,576 on September 1, 1913. In other words, there are more than twice



as many idle cars at the present time than there was a year ago. The report indicates that there has been an increase in surplus box cars in the Southern and Western States of approximately 7,000, while reductions have occurred in the Eastern and Central States and in Canada. The largest decreases in surplus coal cars have occurred in the Eastern States and in Central Freight Association territory, with a small reduction on the Pacific Coast. A slight increase in this class of equipment is recorded for the Northwest. Shortages on September 1, 1914, amounted to but 1,918 cars as against 2,115 on September 15, 1914, and 15,270 on September 1, 1913. Present indications are that there will be no general shortage of freight cars during the fall and winter months, as the domestic grain movement is now well under way and the supply of cars is plentiful in the territory involved.

Car Balance and Performance for May.

THE American Railway Association, through its Committee on Relations between Railroads, has issued its statistical bulletin No. 176, covering car balance and performance for May, 1914.

The miles per car per day were 22.2, compared with 23.0 for April. This figure for May, 1913, was 25.0.

Ton miles per car per day for May were 329, compared with 334 for April. This is a decrease of 17.3 per cent compared with the figure for May, 1913, which was 387.

The proportion of home cars on line was 68 per cent, compared with 64 per cent in April. This is an increase of 12 points over May, 1913.

The per cent of loaded car mileage increased from 60.2 per cent in April to 68.0 per cent in May. This figure for May, 1913, was 68.7 per cent.

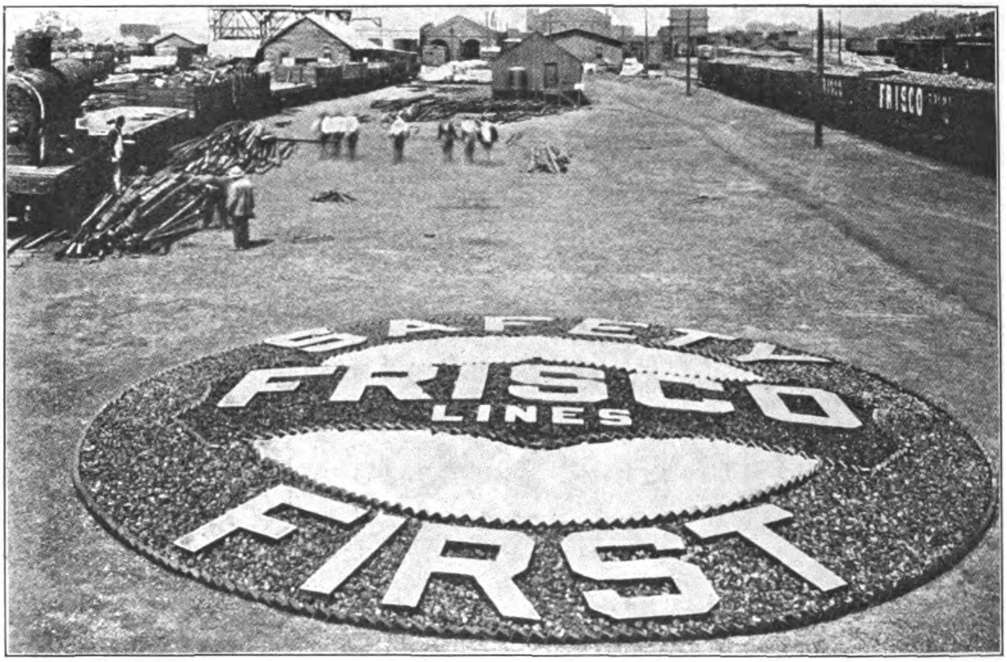
The average earnings per car per day for all cars on line decreased 23 cents to $2.18 in May. This figure for May, 1913, was $2.55.

Award of Safety Banner by Southern Pacific Company.

THE Southern Pacific Company's safety banner for the present year has been awarded to the Salt Lake Division on the Northern District, the Stockton Division on the Southern District and the Sacramento general shops. The banners are awarded in each district to the division sending in the greatest number of practical safety suggestions per hundred employes and the competition recently closed was the keenest ever held and the most gratifying to the Company's officials. Considering the system as a whole, over fifty per cent more safety suggestions were made than last year and over 80 per cent more of them were considered practical. The cost of the improvements made as the result of these suggestions during the year ending June 30, 1914, amounted to nearly $130,000, with pending expenditures for adopted suggestions approximating $175,000. The Southern Pacific Company spends a tremendous amount of money annually to secure the safety of life and limb of employes and patrons, but the money above mentioned went, and is going—into improvements suggested by the men on the line.

Safety Developments on the Santa Fe.

THE Santa Fe has recently issued a comparative statement showing the number of personal injuries to employes only during the fiscal years ending June 30, 1913 and June 30, 1914. This statement shows that during the latter fiscal year, 13,421 employes were injured as against 12,107 for the previous year, a decrease of 1,314 or ten per cent. The number killed during the same periods was for the fiscal year ending June 30, 1914, 103 as compared with 66 for the previous year, a decrease of 37. In connection with the reduction in the number of employes injured, it would perhaps be fair to state that during the last year, quite a number of minor injuries were reported and recorded, of which in former years, no record was made, so that, as a matter of fact, the beneficial results of the safety campaign on this road have really been considerably greater than indicated by the latest figures.



Safety First Emblem of the Frisco Lines at Recreation Plant, Springfield, Mo.

The Express Companies and the Safety Movement.

In an educational pamphlet, issued by the American Express Company, the safety first idea is impressed graphically upon the employes in a series of paragraphic and photographic illustrations, showing how a number of accidents occurred and some of the ways in which they might have been averted. The company had one per cent more rigs in the streets than in the previous year, and yet there were thirty per cent more personal injuries. The bulletin points out that greater care should be exercised in operating the wagons and automobiles, and calls attention to improper practices that contribute to accidents.

Stress is laid on the slogan, "Safety First." One paragraph suggests that in all cases of doubt, regardless of the right of way or other sacrifice which it may be necessary to make, the vehicle should be stopped instead of proceeding on the assumption that the one ahead has heard the warning and will get out of the way. Another paragraph is devoted to the need of giving ample warning, so that all danger of accidents and personal injury may be averted. Following are some of the points that the company tries to impress on its drivers:

"Safety should be the first consideration of every employe. Do not think that you have the whole use of the street. Turn corners slowly. Operate your truck at a moderate rate of speed, and respect the warnings of the traffic officer. Do not say that you have no time to be careful, and, finally, never be over-confident."

Economy in Little Things.

It is surprising how economy in little things in railway operations aggregate enormous amounts if constantly employed. Every employe by using a little care or by being watchful of the company's property can individually aid materially in effecting a saving. When the number of employes is considered the importance of practicing every possible economy cannot be over-estimated. The following table published in the Rio Grande "Service Gazette," shows in appliance what the loss, destruction or careless handling of the company's material or supply means:

To Lose, Break or Unnecessarily Use or Destroy the Following Article—	Means That to Replace Such Article the Denver & Rio Grande R. R. must Perform Service as Indicated Below, by Hauling:				
	One ton freight Miles	One car freight* Miles	Onetrain freight† Miles	One pass. Miles	Onepass. train‡ Miles
1 Lead pencil ..	1.2	...	...	...	...
1 2 cent postage stamp	1.7	...	...	1.0	...
1 Station lamp chimney	8.4	...	...	4.9	...
1 White lantern globe	12.6	.93	...	7.3	...
1 Red lantern globe	43.7	3.2	...	25.6	...
1 Water bucket..	36.1	2.6	...	21.2	...
1 Snow shovel ..	39.4	2.9	...	23.2	...
1 Conductor punch	117.6	8.7	...	68.9	.96
1 10-gal. Oil can	88.2	6.5	...	51.7	...
1 5-gal. Oil can.	67.4	4.9	...	39.4	...
1 Wheelbarrow .	315.1	23.3	1.0	184.7	2.5
Tools and supplies not in use, and therefore a waste, picked up around stations during one month and returned to storekeeper	7605.0	561.5	26.5	4453.7	60.7

*Average revenue tons per car, 13.50.

†Average cars per train, 22.60; average revenue tons per train, 305.18.

‡Average cars per train, 6.24; average number revenue passengers per train, 64.01.

Mechanical

Summer Course for Engineering Teachers at East Pittsburgh,

FOLLOWING a custom adopted four years ago this summer, the Westinghouse Electric & Mfg. Co. has had at its East Pittsburgh works, a number of college professors engaged in regular shop and engineering work.

This course was the result of a conference held at a meeting of the Society for the Promotion of Engineering Education held in Pittsburgh in the summer of 1911. At that time a number of college professors were invited to spend a portion of their vacation at the East Pittsburgh works, and so become more familiar with actual working conditions in the manufacture of electrical apparatus. So successful was the scheme which was tried by a number of professors that the following year regular employment was opened to a number of engineering teachers.

This year circumstances made it necessary to postpone the beginning of the course from the date originally set, which had the effect of lessening the attendance because a number of the teachers had made other plans for the summer.

As the accompanying photograph indicates, however, fifteen engineering teachers took the course during the present summer and represented technical institutions in practically all sections of the country. These teachers it might be added, are treated just the same as the regular shop employes and therefore, have an excellent chance to gain practical first-hand information on the building of electrical apparatus.

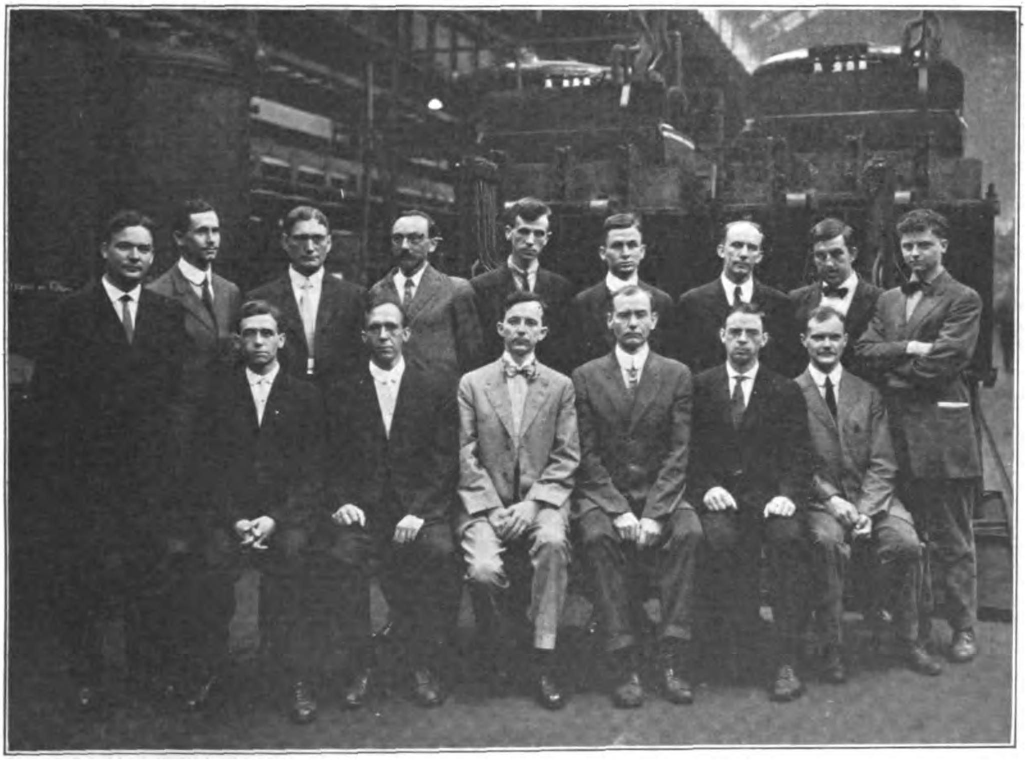
A Flexible Rail Joint for Steam Shovel Tracks.

J. P. THULL, a steam shovel operator in the Panama Canal zone, has recently invented a flexible rail joint to be used in connection with steam shovel tracks which should prove of considerable interest to railway officials engaged in construction work. It is well understood that the track on which steam shovels operate needs an unusual amount of flexibility in order that it may adapt itself to the irregular surface upon which it is laid. Often, if the joints are bolted tightly together insufficient allowance is made for lateral movement and this often causes breakage or distortion. On the other hand, if the bolts are left loose enough to allow for sufficient lateral play the track may be so insecure as to lead to derailment.

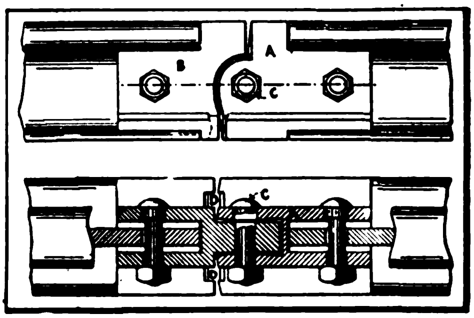
In order to overcome these difficulties, Mr. Thull has invented a rail joint for this particular service which has now been successfully in use for several months on the Panama Canal. The invention, as shown in the accompanying illustration consists of two steel castings bolted to and projecting beyond the rail ends.

One casting A is of H section, the end of the web of the rail entering one of the recesses, while the other receives the end of the casting B bolted to the other rail.

Each casting is secured to its rail by a single



College Professors Who Took the Summer Course at the Works of the Westinghouse Electric and Manufacturing Company.

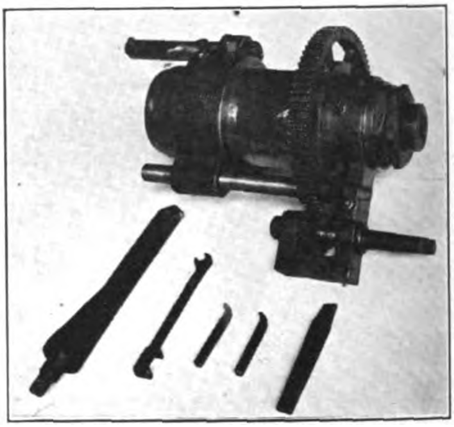


Flexible Rail Joint for Steam Shovel Tracks.

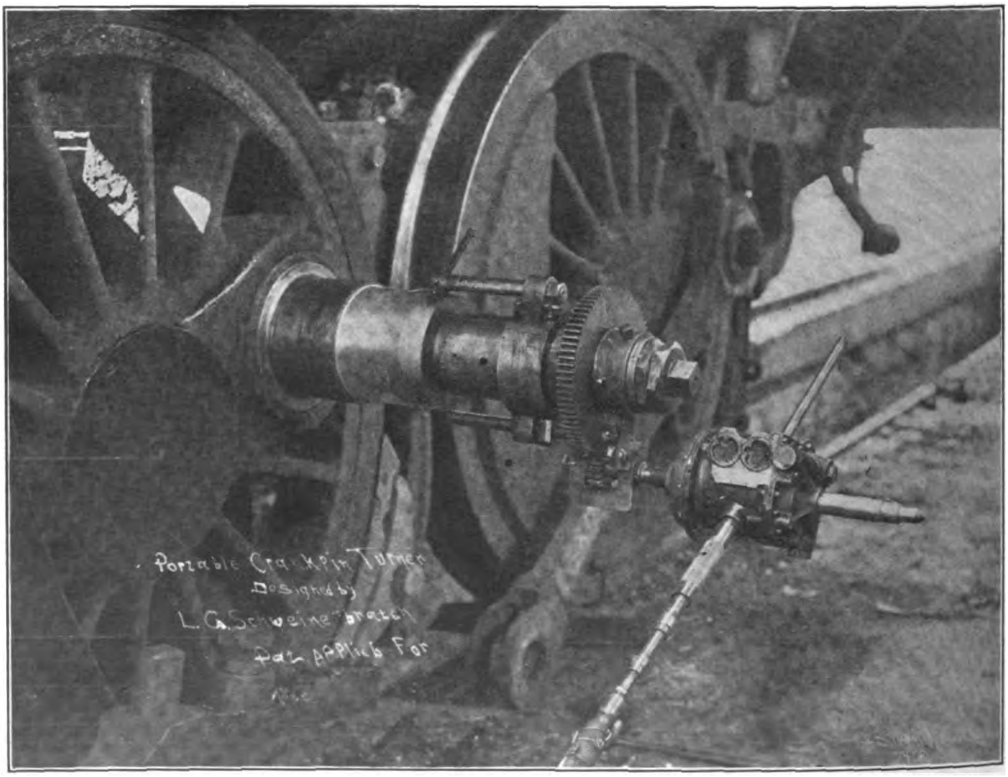
bolt, while a third bolt C, through the engaging portions of the castings, forms a pivot allowing for longitudinal flexibility. The outer or projecting ends of the H casting are curved laterally, as shown, thus allowing for lateral flexibility. In case this lateral movement should be undesirable at any time, however, it may be prevented by driving spikes in the slots D, provided for the purpose.

New Crank Pin Turner Invented by Southern Machinist.

A MACHINIST in the Birmingham shops of the Southern Railway, has recently invented a portable crank pin turner, as indicated in the accompanying illustration, which has been used with success at a number of points. The machine is the result of a request by the master mechanic for a device for turning the eccentric shape and worn-out-of-round crank pins without removing the pins from the wheels. The turner is simple in construction and built exclusively out of steel and will true up a bearing in one hour and thirty minutes. It is reported that this device is being employed with satisfactory results not only by the Southern Railway but by the Seaboard Air Line, the Pennsylvania Lines West of Pittsburgh and a number of other roads.



Crank Pin Turner and Tools Used in its Operation.



Method of Applying Crank Pin Turner to Locomotive Wheel.

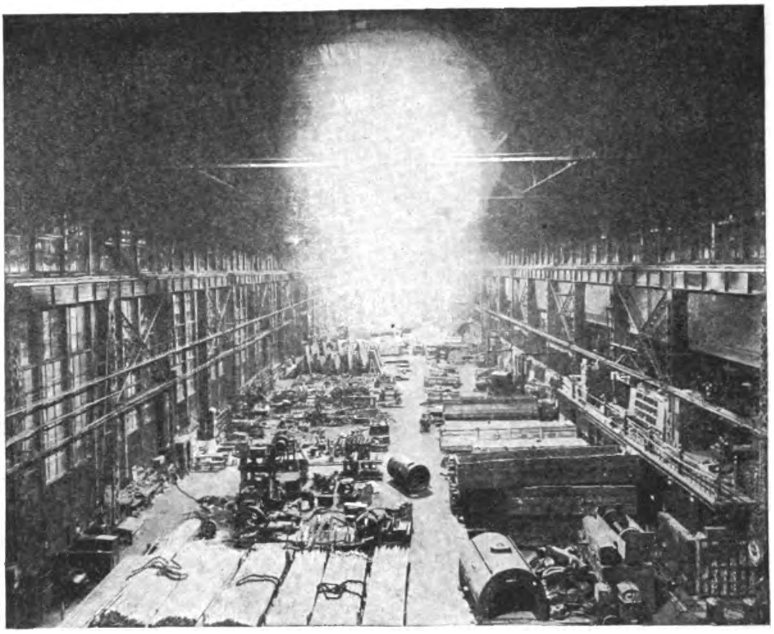
An Exceptionally Well Lighted Railroad Shop.

THE manifold advantages of having adequate illumination in an industrial plant are being realized by no class of operators more readily than the far-seeing railroad men. Not only does the proper illumination of a shop mean a better and more efficient class of work turned out, but exhaustive tests recently made in a large industrial plant proved conclusively that a workman actually made a gain of several minutes per day in the production of a given piece of work, owing entirely to the better illumination with which he was supplied. These few minutes when multiplied by a large number of workmen amount to a considerable item.

There are shown herewith some views of an

A LOCOMOTIVE BOILER SHOP ARTIFICIALLY LIGHTED.

LOCOMOTIVE ERECTING SHOP ILLUMINATED IN THE SAME MANNER.



LOCOMOTIVE BOILER SHOP; VIEW TAKEN BY ARTIFICIAL ILLUMINATION.

excellently lighted boiler shop and erection shop of a prominent eastern railroad. As will be noted from a glance at the photographs reproduced herewith which were taken at night, the illumination is abundant but entirely without glare or shadows, reaching every part of the shop. The buildings are 528 feet long and 58 feet wide giving an area of 30,624 square feet in each building.

The illumination for these buildings is furnished by type Z Cooper Hewitt Quartz lamps operating in a 220-volt direct current circuit. This lamp is a modification of the well-known Cooper Hewitt lamp based on the same fundamental principles, but possessing some essential differences. The details of construction have been described in the trade technical press. The lamp uses the mercury vapor, and a short tube of pure fused quartz instead of the long tube of lead glass used in the older types.

Ten lamps are installed in the boiler shop placed at regular intervals of 52 feet down the middle of the building, each lamp lighting an average of 3,062 feet.

In the erecting shop there are twelve lamps regularly spaced down the middle of the building at intervals of 44 feet, giving an average space lighted by each lamp of 2,552 feet.

All the lamps are hung at a height of fifty feet above the floor.

The lamps are rated at 2,400 candle power with an energy consumption of 725 watts, or a total for the installation of approximately sixteen kilowatts.

The light afforded by these lamps is entirely sufficient for all purposes even the locomotive pit being well illuminated. The only other form of artificial light required is a portable hand lamp needed by the workman when he goes inside the boiler.

The total lumens per lamp from these units is 14,603, with a total available in a zone of 0 to 60 degrees of 10,800 lumens per lamp which, with a wattage of 725 gives a value of 20.2 total lumens per watt, and 14.9 available lumens per watt.

The efficiency of the system as installed is made evident from the low wattage consumption obtained per square foot, these being .28 for the erecting shop and .24 for the boiler shop, the former being said to be the best lighted erecting shop in the country.

The average candle feet obtained are 4.24 for the erecting shop and 3.53 for the boiler shop.

No better evidence of the success of the installation from a practical viewpoint can be secured than the universal commendation of the employes who are working under the light. They are universally pleased with it and the results they are able to obtain.

It is interesting to note, however, that when a trial installation of four lamps was first made, there was a certain antipathy to the light on the part of the men employed, because of the difference in color value, but this speedily disappeared after they gave it a thorough trial. This trial resulted in the adoption of the complete installation of these units.

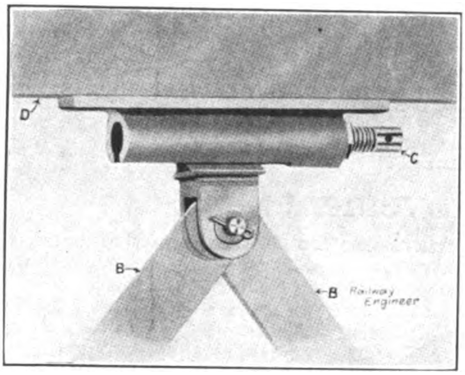
The lamps have been installed at various times but the entire installation averages practically sixteen months and the maintenance charges for the period totals $134.54 or $4.58 per lamp per year.

Window Balancer with New Features.

THE annexed drawings illustrate the "lazy tongs" window balancer patented and manufactured by Messrs. G. D. Peters and Co., Ltd., Moorfields, London. The lazy tongs are of the usual pattern, but the patent knuckle joint and the top universal joint give the whole arrangement great advantages.

The spring box, which is screwed down on to the bottom of the well, is shown in section so that the patent knuckle joint is clearly seen in connection with the eye bolt into which the spring is hooked. The spring is in perfect alignment and quite easily adjusted. It will be noticed that there is only one spring.

The top universal joint C, fig. 1, which is fixed to the bottom bar D of the drop light, is adjustable so that the point of support can easily be brought exactly under the centre of gravity of the window. This again is a most important point as it prevents the window rubbing and jamming against the sides of its case.

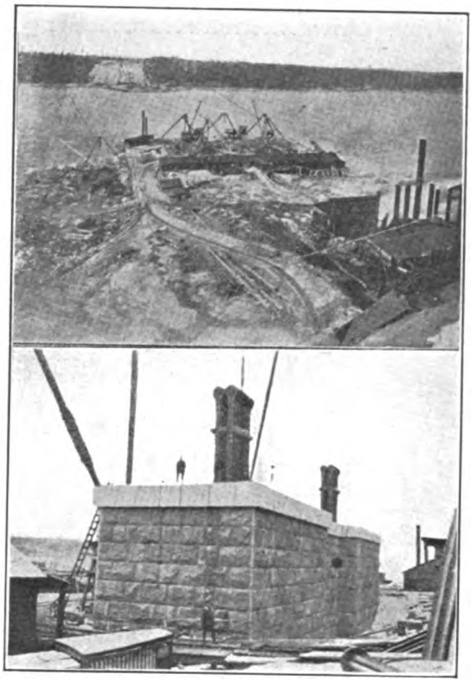


A New Universal Joint for Window Balancer.

The New Quebec Bridge.

According to the Canadian Department of Railways and Canals, work on the new Quebec bridge which was contracted to be finished on December 31, 1915, is making satisfactory progress. The contract price is 9 2-10 cents a ton and will aggregate about $8,650,000, a saving of about $2,600,000 having been effected by the elimination of the highways for vehicular traffic contemplated in the original design.

The bridge when constructed will have a total length of 3,228 feet or about 3-5 of a mile. The center span will be 1,800 feet long, the length of the suspended portion of it will be 640 feet. This span will, for a length of 760 feet over the channel of the river, have a height of 150 feet between its lower members and the high water level of the river. The two cantilever arms will each be 580 feet long. The width of the bridge between trusses will be 88 feet. The bridge will comprise a double track railway, and two sidewalks for foot passengers.



Two Views of Construction Progress of the Quebec Bridge.

First, showing general view of the plant on south shore and second, the north anchorage pier with anchorage eye bars extending above pier.

ELECTRICAL.

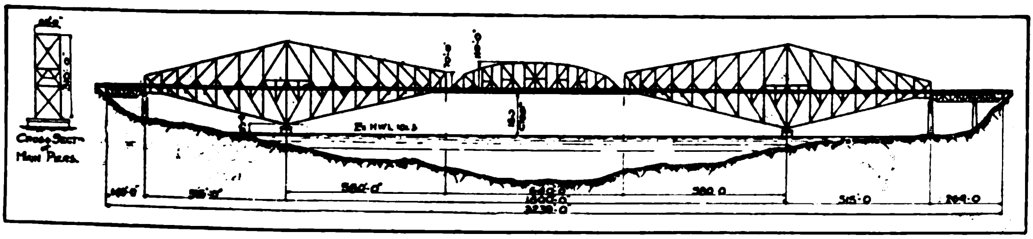
Census Report on Electric Railways.

The total trackage owned by the 1,260 street and electric railways in the United States in 1912, according to the census bulletin just issued was 40,470 miles and 649 miles leased. About one-half of these companies had their own power plant equipment. The total capitalization of the operating companies was $4,708,568,141, of which $2,384,344,513 was capital stock and $2,324,223,628 funded debt.

These lines of railways carried in that year 12,135,341,716 passengers, of whom 2,423,918,024 were on transfers and 165,869,025 were free. The average number of revenue passengers to each mile of track operated was 232,556.

The gross income of these railways, less operating expenses, was $585,930,517 and the net income was $61,910,753, made up of $51,650,117 dividends and $10,260,636 surplus.

There were employed by the operating lines 282,461 persons, with a total salary and wage expenditure of $200,890,939.



Quebec Bridge Across the St. Lawrence River, Above Quebec Now in Course of Construction.

New Haven Electrification Contract.

IT is reported that the New Haven Road is at work on the practical negotiations of one of the biggest power contracts ever closed for the purpose of train propulsion.

The parties to this contract will be the railroad and the New York Edison Co. In consequence, the Edison Co. will have to expand its generating capacity.

The additional energy which will be obtained under the new contract will supply the power for New York, Westchester & Boston and will permit the New Haven itself to operate electrically from New York to New Haven, Conn., at about 70 per cent of full capacity. When financial and other difficulties clear up, development of the Housatonic Power enterprise will enable complete electrical operation over the entire 70-mile stretch.

Although track and overhead work has been intact a month, the railroad has been able to run by electricity only the relatively small number of eight or ten trains per diem into and out of New Haven. This is due to insufficiency of the company's Cos Cob power plant to meet the increased demands of the entire electrified zone.

This zone really requires yearly about 200,000,000 kilowatt hours of electricity. Engineers estimate that such an amount of power should be obtainable at an expenditure of not over $2,000,000 per annum. It is planned to use the New York Edison current for the New York end of the zone, the company's Cos Cob station's power between Port Chester and Stamford, and Housatonic Power from there to New Haven.

The New Haven has spent a total of about $16,000,000 on electrification.

Its whole electrification experience to date has been only in the nature of an experiment. Throughout its extensive electrification program, the road has blazed practically a pioneer path.

It will be unwise and unprofitable for either the public or the road to boom electrification on the basis of present results.

In the matter of electrification, the New Haven must proceed very slowly to make sure of benefitting from experience.

Terminal Improvements

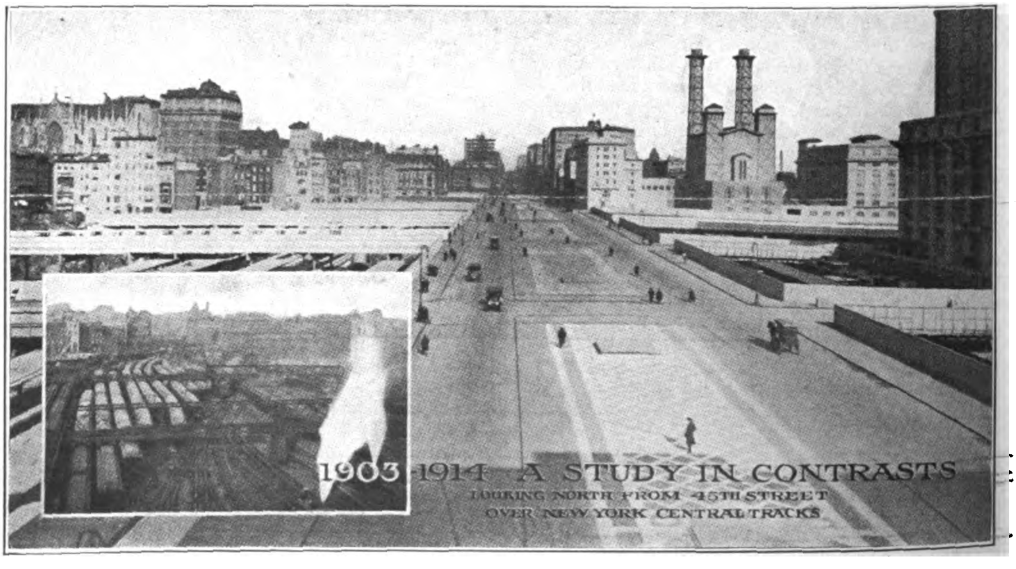
The Advantage of the Modern Terminals.

THE new Grand Central Terminal at New York, which has been fully described in the columns of the "Railway World," offers a striking example of how such a terminal can transform an entire neighborhood. The two photographs, one within the other, herewith presented, show the conditions surrounding the Grand Central Terminal in 1903, before the new building and constructions and the general appearance of the same locality at the present time. In the old picture may be seen the railroad yards at the street level crossed by two or three elevated foot bridges. As a matter of fact, the whole area covered by the railroad yard north of 45th Street was closed to the public and was of no use other than a place to shift trains.

In the construction of the new terminal, electricity having suspended steam, it was possible to depress the tracks below the street level and thus to restore the cross streets from 45th Street to 56th Street to public use, in addition to which Park Avenue, a magnificent thoroughfare, 140 feet wide, has been opened from 45th Street.

The larger photograph tells its own story.

Already a number of handsome buildings have been erected in the area, among them the Railroad Men's Y. M. C. A. on Park Avenue, 49th to 50th Street; the Grand Central Palace on Lexington Avenue, 46th to 47th Street, and the terminal heating and lighting plant (the building with the two stacks), 49th to 50th Street, between Lexington and Park avenues. When in the course of a few years the property now vacant over the tracks is built up there will be


1903 1914 A STUDY IN CONTRASTS
LOOKING NORTH FROM 45TH STREET
OVER NEW YORK CENTRAL TRACKS

A General View of the Grand Central Terminal at New York Showing the Great Improvements Which Have Taken Place as Compared With the Old Terminal.

established in place of the old, smoky railroad yard, a center of harmonious architectural development that will be the pride of New York City and a monument to the foresight of the men who planned Grand Central Terminal.

The New Great Northern-Northern Pacific General Office Building at St. Paul.

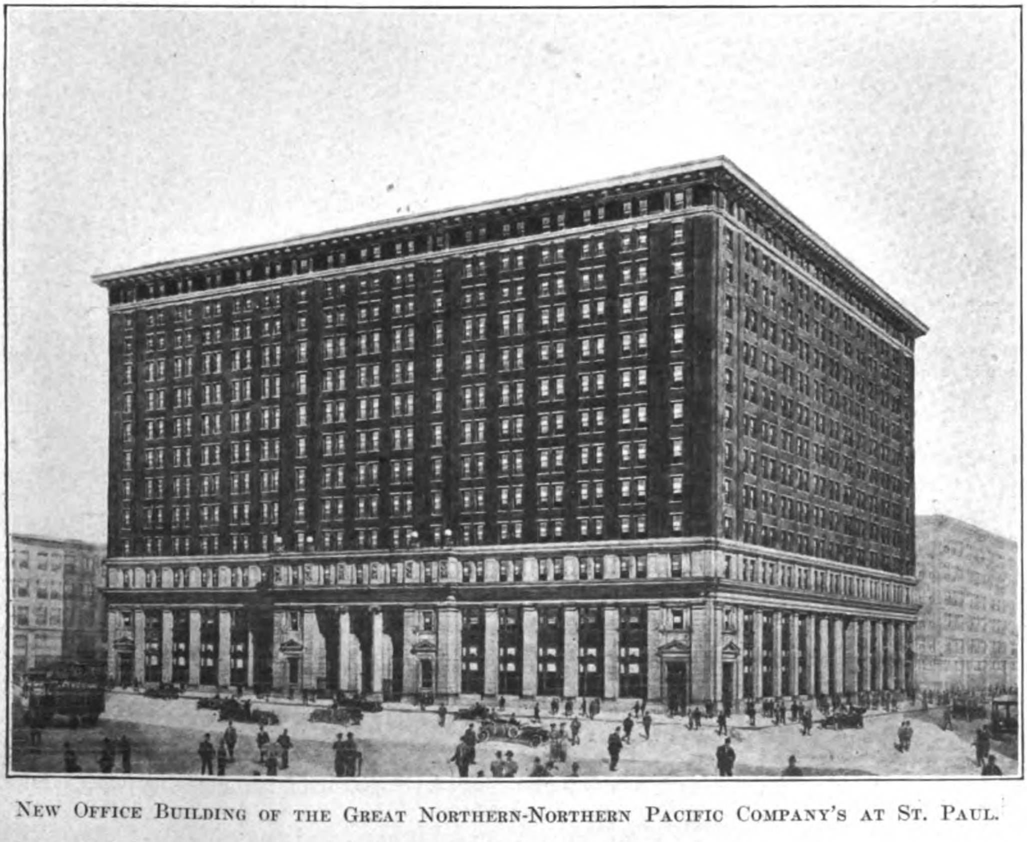
CONTRACTS have recently been let for the construction of a $3,500,000 office building in St. Paul to house the general offices of the Great Northern and the Northern Pacific, with provision also, for the accommodation of two banks on the main floor. The new structure will be located on Jackson Street, occupying the entire block between Fourth and Fifth Streets. The overall dimensions of the building will be 290 feet 5⅜ inches by 232 feet. It will be thirteen stories high, with a basement and sub-basement. The attic story will be framed in the same manner as the other stories to make possible the addition of four stories with the minimum amount of changes, if such an addition becomes advisable. The building will be of steel frame construction, with combination tile and reinforced concrete floor slabs. The exterior finish will be of stone for the lower two stories, and brick and terra cotta for the remaining height.

The central portion of the first floor will be occupied by the First National Bank and the Northwestern Trust Company. The city ticket office and exhibition rooms of both railways will occupy the ends of the building on street level floor. The public space in the bank will be finished with mahogany, marble and genuine bronze grills.

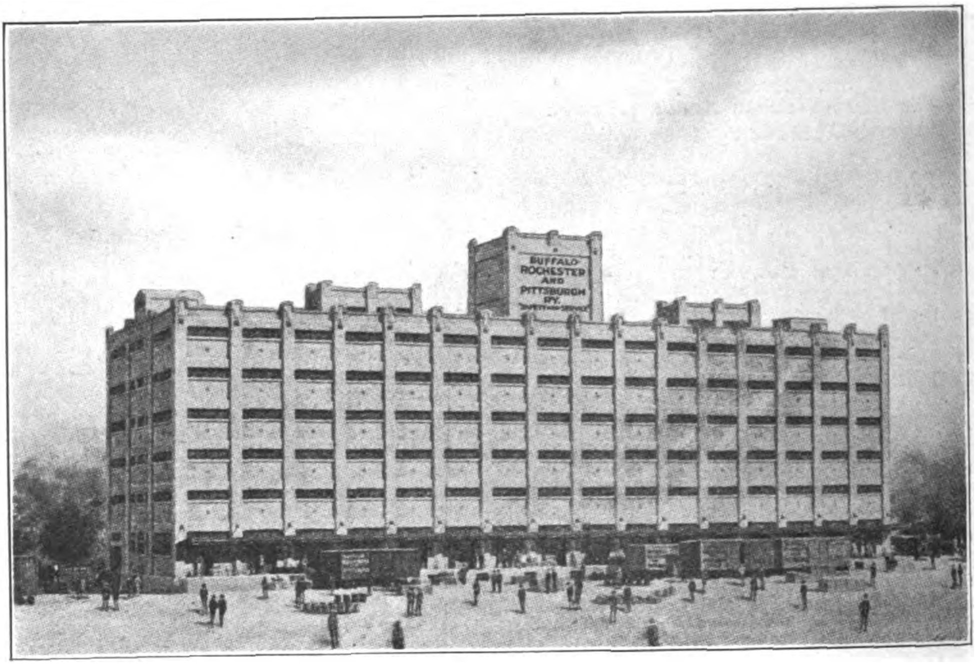
The basement will contain the safety deposit vaults for the banks, and in the sub-basement will be located the power plant, with facilities to supply electricity to light the entire building and to operate the elevators; also to furnish all heat and to operate the mechanical ventilating system installed throughout the building.

The central portion of the second floor will contain banking offices, meeting rooms, etc. The upper portion of the building will surround a light court 145 feet by 109 feet in size. The office area on each floor will be completely divided in the middle; one-half to be used by the Great Northern and the other by the Northern Pacific. A typical office floor contains a total area of about 46,000 sq. ft. inside the enclosing walls. The woodwork in these office floors will be of oak, and the trimming throughout will be made severely plain.

The design and construction of the building are being handled by a committee representing the three owners, consisting of R. Butt, assistant to the president of the G. N.; W. L. Darling, chief engineer, N. P., and E. H. Bailey, president of the First National Bank. C. S. Frost, Chicago, is the architect, and Max Toltz, St. Paul, the structural steel engineer. The contract for the structural steel has been let to the Cambria Steel Co., Johnstown, Pa., and for the general construction to Grand, Smith & Co., St Paul, Minnesota.



NEW OFFICE BUILDING OF THE GREAT NORTHERN-NORTHERN PACIFIC COMPANY'S AT ST. PAUL.



NEW WAREHOUSE OF THE BUFFALO, ROCHESTER AND PITTSBURGH RAILWAY AT ROCHESTER.

The New Rochester Warehouse of the Buffalo, Rochester and Pittsburgh.

THE Buffalo, Rochester and Pittsburgh has recently completed a new warehouse at Rochester which adds greatly to the advantages of its terminal facilities at that point. The building which will be entirely completed in October, has six floors and a basement, four elevators and a capacity for storing 400 cars of freight. The equipment will be modern throughout and the building of absolute fire-proof construction. The accompanying illustration gives an excellent idea of its general appearance.

The advantages of such a warehouse to the commercial interests of the city are many, for example, the merchant can abandon all or part of his present expensive storage arrangements, relieving congestion at his store, reducing cost of insurance, handling and cartage, not only saving expense in operation, but also enabling him to use his capital in extending his business.

The manufacturer can find proper and reasonable storage for his product which must be held to accommodate the trade or as business conditions may require, negotiable receipts being given by the warehouse company which can be used as collateral.

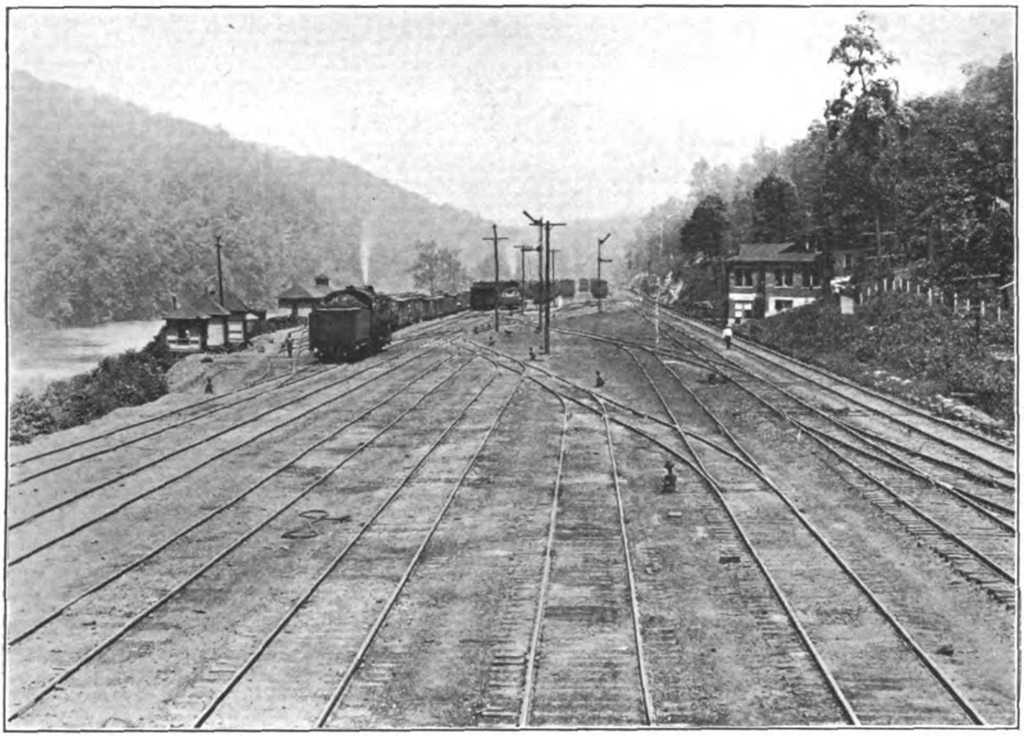
The broker or dealer who only desires an office or desk can have his goods consigned for delivery at the Buffalo, Rochester and Pittsburgh Warehouse and have his orders filled either for local delivery or for other points at less expense than can otherwise be provided. Large stocks of goods can be purchased when prices are favorable and stored until trade conditions warrant their sale.

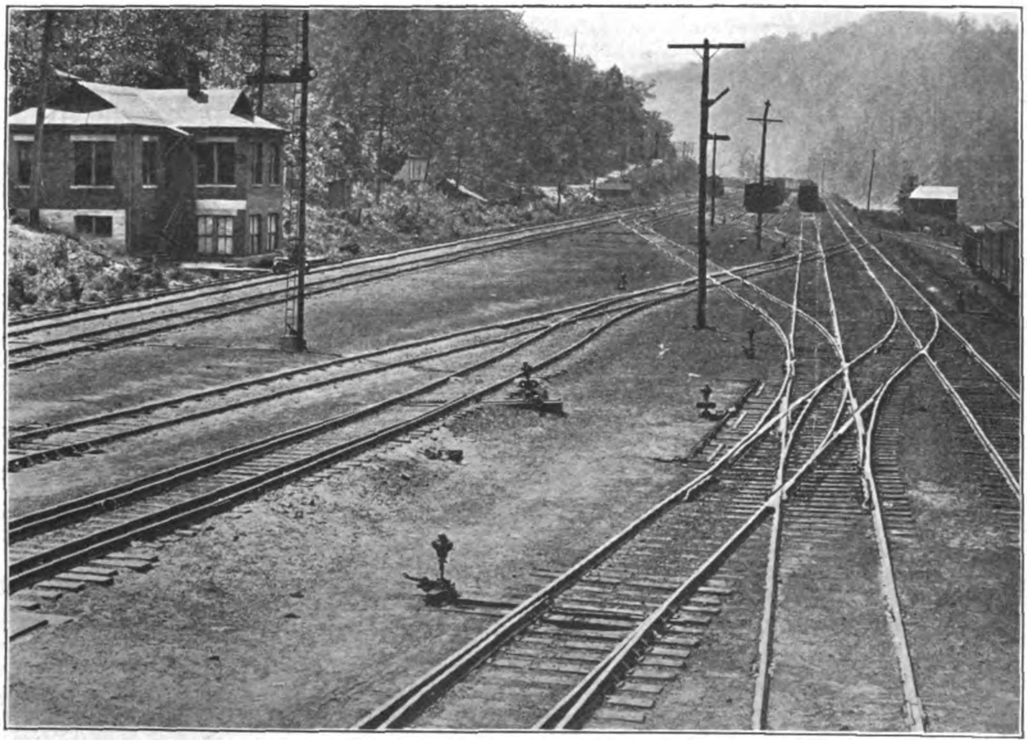
New Terminal Yards for the Texas Pacific.

THE Cincinnati, New Orleans and Texas Pacific has recently completed district terminal yards at Oakdale, Tenn. The layout consists of two yards, one for the north bound trains and one for the south bound, as shown in the accompanying photographs. Each yard contains five tracks of about sixty-five cars capacity each, the north yard being used for south bound trains and the south yard for north bound trains. Entrance is from either direction at the outside ends and departure from the middle where the yard office and interlocking plants are located and where all of the switching is done. The yard is so arranged that two switch engines can work simultaneously, one on the north bound and the other on the south bound trains. This arrangement materially assists in expediting the movement of traffic over the line.

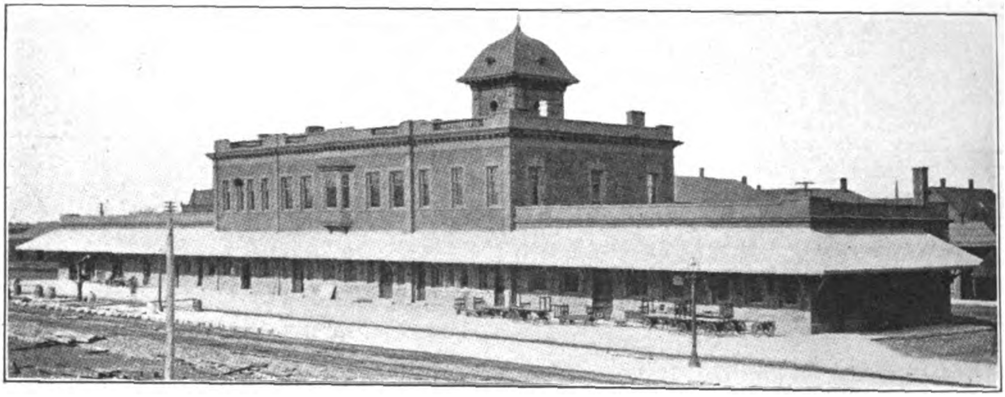
Activity in Terminal Work in Canada.

IT constitutes a rather disheartening comparison to note the difference in the work of railway developments at the present time as between the United States and Canada. In the latter country, in spite of the European war, tremendous progress is being made all along the line and the Canadian Government is taking an active part in promoting and protecting the transportation industry. While our country has outgrown such methods as involve government subsidies, the pity of it is that government regulation has become so restrictive as to practically stop, for the present at least, those railway improvements which are so essential for the further development of our great national resources.





Two Views of the New Terminal Yards of the Cincinnati, New Orleans and Texas Pacific Railway at Oakdale, Tenn. One is Employed for North Bound and the Other for South Bound Trains.



INTERCOLONIAL RAILWAY'S NEW PASSENGER STATION AT TRURO, N. S.

The accompanying photograph is a fair illustration of the type of new station building which is being constructed by Canadian roads for the smaller towns and communities. The particular one referred to is located at Truro, N. S., on the Intercolonial Railway and on its face bears the stamp of a progressive railway policy and the ability to invest sufficient capital in order to give a growing and enterprising town proper railway facilities. If government officials of this country could only see the light sufficiently to permit United States Railways to go and do likewise, it would mean the beginning of a period of progress and prosperity such as the country has not seen for several years.

Interstate Commerce Commission

To Rehear Eastern Advance Rate Case.

THE Commission as elsewhere stated, has agreed to a rehearing in the five per cent advance rate case to begin on October 19th and to be confined to presentation of facts.

The text of the order of the Commission follows:

"Upon consideration of a petition of respondents for modification of orders heretofore entered and good cause appearing therefor,

"It is ordered, that further hearing in said cases be, and is hereby granted; said hearing to be limited to presentation of facts disclosed and occurrences originating subsequently to the date upon which the records previously made in these cases were closed.

"It is further ordered, that pending such rehearing and further order of the Commission in the cases, the Commission's report findings and orders heretofore entered there shall remain in full force. It is further ordered that this proceeding be assigned for hearing at the office of the Commission in Washington, D. C., on the 19th day of October, 1914, at ten o'clock A. M.

"It is further ordered, that a copy of this order be served upon each of the parties to the cases."

Shippers Favor Rate Advance.

BUSINESS men all over the country are writing to the Interstate Commerce Commission and to their Congressmen urging that some relief be immediately granted to the carriers.

The Illinois Manufacturers' Association which originally opposed an increase in freight rates has now decided that the railways are in urgent need of assistance and has sent the following circular to all its members:

"Many members of the Illinois Manufacturers' Association are writing letters to their Senators and to Representatives in the lower House urging the adoption of a joint resolution directing the Interstate Commerce Commission to review and revise its decision in the recent application of the Eastern railroads for a five per cent advance in freight rates.

"It is contended that our financial situation is under a severe pressure because it is threatened by the unloading of railroad securities held by Europe and that the break is only temporarily halted by the close of the public markets. It is claimed that the small advance which the Interstate Commerce Commission has given the carriers will have no effect in restoring and establishing the confidence of the large investors and holders of American securities abroad, which it is maintained will be sent over as soon as it is possible to do so to draw our gold or its equivalent.

"The Interstate Commerce Commission will have a big opportunity to take a big view of a big question if Congress will take the action requested; and it will take it if enough people appeal to it to act."

Mr. John M. Glenn, secretary of that body, in discussing the action taken, said:

"The Illinois Manufacturers' Association, which for several years opposed every effort to increase railroad rates, will assist the railroads to reopen their fight for higher rates before the Interstate Commerce Commission.

"The Illinois Manufacturers' Association is in favor of any movement which will mean better business conditions. We opposed former efforts on the part of railroads to secure higher rates, because we did not believe that conditions in the country warranted the change and because we would be the ones who would suffer. We still want to ship our goods just as cheaply as possible, but we want them shipped. Conditions now are such that they can not always be shipped, partly because there is no market and partly because the railroads can not afford to supply the needed equipment. The railroads are in trouble and, because they are in trouble, we are in trouble also."

Increased Rates to be Filed on Ten Days' Notice.

THE Commission has authorized the railroads in Central Freight Association territory to make effective upon ten days' notice the increased freight rates allowed in the recent rate decision, excepting those on grain and its products, which must be preceded by the regular thirty days' notice.

Three-Cent Passenger Fares Upheld in Western States.

INTERSTATE railroad passenger fares of three cents a mile through Arkansas, Missouri and Oklahoma have been upheld in a decision by the Commission, acting on complaints of the public service commissions of those states, which sought to have the two-cent intrastate rate made the basis of through traffic charges.

The Commission's ruling is important, as the reduction sought would have had a wide influence on passenger traffic rates generally. Six states—Arkansas, Kansas, Minnesota, Nebraska, Missouri and Oklahoma—established a two-cent intrastate rate in 1907 and resulting litigation brought a ruling from the Supreme Court that nothing confiscatory could be found to justify the railroads' complaint.

In appealing to the Interstate Commerce Commission the state commissions sought to show that a reduction of the interstate rate would stimulate travel, filing exhibits tending to support the contention that the two-cent intrastate rates had meant increased revenues for the carriers. The Commission thought other conclusions might be drawn from other tables and sustained the three-cent rate. The decision, however, asserts that the ruling does not mean that "there may not be force in the theory that a reduction of rate tends to increase travel."

Increase in Eastern Mileage Tickets.

PRACTICALLY all the principal railroads of the East have completed filing with the Commission the new tariffs proposing increases in the price of mileage tickets. The roads some time ago began giving notice of the new rates to take effect October 1. The increases approximate twelve and one half per cent.

Many of the lines propose to increase the price of thousand-mile local books from $20 to $22.50. The $5 refund on interchangeable books which sold for $25 would be reduced to $2.50.

Rate Advances Approved.

ADVANCES in the rates on lumber and other forest products from points on the Maine Central Railroad to points on the Boston and Maine Railroad have been approved by the Commission.

The new rates took effect on September 12. The Commission held that the roads had justified the proposed increases on the basis of the increase in operating expenses. The schedule did not include the rates on wood pulp, which are to continue as at present.

The Commission also held the Great Northern and other railroads have justified the increased rates on beer and other malt products between stations in Iowa and South Dakota and points in Minnesota and Wisconsin.

Extension of Time for Southeastern Roads.

THE Commission has granted to the Southeastern railroads an extension of time until April 1, 1915, to meet its order for readjustment of class and commodity rates from Eastern cities, Ohio River points, and New Orleans to south Atlantic and Gulf ports.

Extension of Round Trip Tickets of Americans Abroad Recommended.

ALTHOUGH without authority to require the railroads to do so, the Commission has recommended that the carriers extend the return time on round-trip transportation held by travelers marooned in Europe and which may expire before they shall be able to return to this country, and the sentiment in local traffic circles, unofficially expressed, is favorable to the suggestion.

Tap Decision Vacated.

IN conformity with the ruling of the Supreme Court, the Commission has issued an order vacating its previous decision which held tap lines not to be common carriers. Under the order the division of rates which obtained prior to May 1, 1912, will be re-established and tap lines permitted to make joint rates and throlgh routes with trunk lines.

Hearing on Car Embargoes Set for January 20th.

A HEARING on the general subject of regulation of railroads levying embargoes on freight cars will be held by the Commission in Chicago on January 20, 1915. The Commission instituted a general investigation into this subject about two months ago and it has been decided to announce the beginning of the public hearings in order to give ample opportunity to shippers and railroads to prepare any case they may desire to present.

The investigation has been assigned to the general direction of Commissioner Daniels. It is expected that Mr. Daniels will personally conduct the Chicago hearing next January.

Time on Intermountain Rate Orders Extended.

THE Commission has extended the effective date of the orders of the Intermountain Rate Case from October 1st to November 15th, to give the Western carriers more time to adjust their tariffs.

Rulings Under Long and Short Haul Clause.

THE Commission has entered an order denying the application of the Atchison, Topeka and Santa Fe and other Western railroads, filed under the long and short haul clause relating to the Western sugar rates, in the following particulars:

Authority to continue rate on sugar from San Francisco and from California sugar producing points to Missouri River points lower than to intermediate stations via reasonably direct lines denied.

Authority to continue rates on sugar from Colorado producing points and New Orleans to El Paso lower than to intermediate points denied.

Authority to continue rates from New Orleans to Oklahoma points lower than to intermediate Texas points via direct lines denied.

In the other particulars the application was granted as follows:

Authority to continue rates from San Francisco and from California producing points to Missouri River points lower than to intermediate stations via certain indirect routes granted.

Authority to establish rates from California producing points to Chicago lower than to intermediate points granted.

The Commission has also granted the Illinois Central relief under the long and short haul clause in connection with rates on sugar from New Osleans, La., to Ohio and Mississippi river crossings. A new schedule of rates will go into effect on January 1. In order to meet the water competition on the rivers the roads may charge a schedule of rates higher to the intermediate points upon a scale fixed by the Commission averaging an excess of 15 cents on distances not exceeding 200 miles and graduated to an excess of 25 cents on distances exceeding 700 miles.

The Commission has also declined to permit the railroads between the Missouri River and the Pacific Coast to ignore the long and short haul rule on wheat and flour.

Pacific Navigation Company Wins Through Rate Case.

THE Commission has issued an order requiring the Southern Pacific and other railroads to make through and joint rates with the Pacific Navigation Company upon a basis equal to similar joint rates now in effect with the San Francisco and Portland Steamship Company and the Pacific Coast Steamship Company. The Pacific Navigation Company operates steamers between San Francisco, San Pedro and San Diego, Cal.

The Commission said: "If rail carriers are permitted to choose the particular boat lines with which they will establish through routes and joint rates they will be able to dictate who shall operate on the water insurance and who shall not, for a boat line which is accorded a monopoly of the through rail and water traffic will soon be able to drive its competitor out of business.

"The spirit of the act to regulate commerce is to maintain the freedom of our ports and to allow boat lines to engage in traffic upon equal terms. To permit the rail carriers serving a port to favor one boat line or another would destroy the freedom of competition between the lines which the act is intended to preserve and would practically close ports to all but the favored vessels."

Rate Suspensions.

PROPOSED increased rates on bituminous coal from points on the Pittsburgh and Lake Erie Railroad to Wilmington, Del., Philadelphia and Baltimore, on traffic destined for points beyond those cities have been suspended by the Commission.

Advances in the rates on high explosives from Baltimore, Philadelphia, New York and other Eastern points located on the Grand Trunk Railway have been further suspended by the Commission from August 29 until February 28. These advances were previously suspended from May 1, but the Commission has not had time within which to complete its investigation into their reasonableness.

Advances amounting to 18 cents in the rates on wheat and flour from points on the Colorado and Southern Railway to Galveston, New Orleans and other Gulf ports for export have been suspended by the Commission from August 28 until December 26. The Commission will conduct an investigation into the reasonableness of the proposed advances.

Advances in the re-icing charges on butter, eggs and other perishable freight from points in Kansas, Nebraska and other states to north Pacific Coast points and other points in the Northwest, proposed by R. H. Countiss and other agents of railroads, have been suspended by the Commission from August 31 and subsequent dates until December 29.

An advance of 2,000 pounds in the carload minimum weight on packing house products and fresh meats from Chicago and other points, to points located on the Louisville and Nashville Railroad, have been suspended from September 1 until December 30. The Commission will conduct an investigation into the reasonableness of the new tariffs.

Advances in the rates on printing and various other kinds of paper in less than carload quantities from certain stations on the Boston and Maine Railroad to New York City and other points proposed by the Boston and Albany Railroad have been suspended by the Commission from August 18 until November 25. Similar advances proposed by the New York, New Haven and Hartford were previously suspended by the Commission.

Tariffs of the Missouri Pacific and other railroads proposing to cancel the joint through commodity rates on lumber from points in Arkansas and other states to points in Central Freight Association and Trunk Line territories, have been suspended by the Commission from August 15 to December 13. The effect of the proposed tariffs would have been to increase the existing rates from two to three cents per 100 pounds. The Commission will conduct an investigation into the reasonableness of the proposed rates.

STATE COMMISSIONS.

Alabama.—After fighting for many years, the Louisville and Nashville has finally accepted the lower freight rates on between 5,000 and 6,000 commodities of common use, and complied with every requirement of the Alabama Railroad Commission. New tariffs setting out the reduced schedules have been filed with the secretary of the Commission. Many reductions are below rates that have been charged by the Southern Railroad for several years under an agreement reached after the Alabama Legislature made statutory rates.

California.—Active steps have been taken by the Railroad Commission to do all in its power to avert the shortage of cars, threatened by the big crops awaiting shipment. The Commission has addressed a circular letter to all shippers and receivers of freight, the text of which follows:

"Indications point to a serious car shortage during the next few months when a large number of cars will be required to move California traffic. The carriers are apprehensive that the situation in California will be more acute during the next few months than it has been at any time in the past.

"The Commission, therefore, urges that receivers and shippers of freight in carload lots use every effort to unload and load cars in the shortest space of time possible and when possible, to load cars to their full capacity regardless of the minimum weight applying on the commodity shipped, thereby materially reducing the number of cars required to handle California business. It is also urged that in ordering cars, shippers should, when possible, advise the carrier from which the cars are ordered, of the quantity of the freight to be moved to afford the carrier an opportunity to more intelligently supply the equipment required for the particular purpose.

"The carriers are requested to handle promptly all carload shipments, to move empty cars to loading points without delay and to promptly repair for service all bad order cars.

"The Commission is of the opinion that the fullest co-operation of carriers and shippers is necessary to meet the situation."

Iowa.—The semi-annual hearing of general freight rates and classifications will be held before the Iowa Railroad Commission at the State House, October 6th. Shippers and railroads all will be heard at that time.

Missouri.—Application for an increase in passenger rates to three cents a mile on main lines and four cents on branch lines, has been filed with the Public Service Commission by the Trunk Lines of Missouri. The railroads also ask for substantial increases in freight rates. The railroads also ask freight rate increases ranging from 25 to 300 per cent.

The two-cent passenger rate and many freight rates were fixed by statute, upheld by the Federal Supreme Court, but the State Supreme Court has since held that the Missouri Public Service Commission has authority to fix rates.

New York.—The Rutland Railroad has secured permission for the issuance of securities for the purchase of a quarter million dollars' worth of passenger equipment. These certificates whose par value is $266,000, are not to be sold at less than 92 so as to net not less than $244,720. The proceeds are to be employed to purchase various classes of passenger equipment.

Ohio.—A pamphlet sent out by the Ohio Public Utility Commission to prevent congestion during the crop-moving period contains the following:

Take your railroad officials into your confidence.

Promptly report to your railroad agent all loaded and empty cars on your sidings.

When ordering cars give the size wanted, the route to be traveled and the destination.

Avoid ordering more cars than you need.

Keep your actual car needs constantly before the operating officials of your railroads.

Load cars to their full physical capacity. Ten cars so loaded gain a car.

Avoid loading a car and starting it on its way without knowing its final destination.

Release cars as promptly as possible after they have been placed for loading or unloading. Two days saved is a car gained.

Whenever you contribute to the delay of a car to-day will be reflected in the promptness of that same car's return for your further service.

Avoid unreasonable exactions.

Co-operate.

Keep the cars moving.

Pennsylvania.—On the application of representatives of the Central Freight Association, the Public Service Commission has agreed to the withdrawal of all tariffs of Pennsylvania intrastate roads, now under voluntary suspension, effective on or before September 12th, but reserved its decision on a request to make effective the five per cent increase in freight rates as modified by the order of the Interstate Commerce Commission on less than the statutory notice.

No matter what its attitude on the latter question may be, the Commission makes it plain that it will not affect the question as to the reasonableness of the increased rates. The matter only involves that section of Western Pennsylvania which comes under the recent ruling of the Interstate Commerce Commission.

LEGAL.

Important Recent Federal and State Legal Decisions Affecting the Carriers.

THE following analysis of the more important Federal and State Court decisions rendered during August and which relate to the operation, management and regulation of the railroads of the United States, constitutes a continuation of the record began in the July issue of the "Railway World." As is apparent, the necessary reference to Court records and authorities is given in each case and any further information desired, will be furnished upon request. Suggestions regarding these records will be thankfully received as an effort is being made to make them of practical value to the legal departments of the various railways.

Injury at Unauthorized Crossing.—(Federal, Western New York.) Plaintiff, while crossing one of defendant's main tracks at a place where the railroad company for years had permitted the public to cross, though not a regular crossing, slipped and caught his foot between a switch point and a rail, and being unable to extricate himself, was run down by an approaching engine, and suffered the loss of a leg. It also appeared that the public use of the place where plaintiff crossed the tracks had been open, constant, and notorious for a long period, and had been with the acquiescence of the railroad company without any attempt to withdraw its permission to the public to so use its premises. Held, that plaintiff was not a trespasser, and that the railroad company was bound to exercise reasonable care to prevent injuries to persons in plaintiff's situation. (Erie R. Co. v. Burke, 214 Fed. 247.)

Rate Regulation.—(Federal, Eastern Kentucky.) Where a railroad company maintained low rates for grain inward bound to distillers to build up the distilling business, and thereby receive a high class return traffic, and the company maintained the same rates for a long time after the reason for their establishment had ceased to exist, the rates were prima facie reasonable, and an order of a state railroad commission fixing the rates for all grain inward bound as lawful was sustained by evidence, for the commission was not bound to assume that an equivalent result would not follow as to outward-bound flour from grain inbound to the miller, or as to all reverse traffic which would normally result directly or indirectly from grain moving in one direction, and the burden was on the company to prove that the rates were unreasonable, before it could complain. (Louisville & N. R. Co. v. Kentucky Railroad Commission, 214 Fed. 465.)

Construction to be Placed Upon Safety Appliance Act.—(Federal, Southern Florida.) It is no defense to an alleged violation of the Safety Appliance Act (Act March 2, 1893, c. 196, 27 Stat. 531), requiring carriers engaged in interstate commerce to have at least 85 per cent of the cars in a train equipped with air brakes so that they may be operated by the engineer, and also requiring all cars, used in interstate commerce to be equipped with operating automatic couplers, that the cars and train in question were only being moved in switching operations.—(United States v. Atlantic Coast Line R. Co., 214 Fed. 498.)

Switching Facilities.—(Federal, Western Pennsylvania.) Interstate Commerce Act (Act Feb. 4, 1887, c. 104, 24 Stat. 380) requires that all carriers shall afford reasonable and equal facilities for the interchange of traffic between their respective lines. Under this act it is unlawful for a terminal railroad company owning trackage which it uses in serving industries along its lines to furnish interchanging facilities to a railroad having physical connection with its tracks and at the same time refusing them to another company which merely operates its trains over the tracks of the company receiving the privilege. (Pennsylvania Co. v. United States, Interstate Commerce Commission, 214 Fed. 445.)

Care to be Exercised at Crossings.—(Maryland.) A railroad crossing of extraordinary danger requires the exercise of extraordinary care, both by the parties attempting to cross, and by the managers of passing trains, and, though the trains have the prior right to pass unobstructed, yet they must give all proper and sufficient signals of their approach. (United Rys. & Electric Co. v. Cain 91 A. 405.)

Injured While Passing Through Train.—(Pennsylvania.) Where, in an excursion train there was a baggage car in the center fixed up with a place for refreshments, and an excursionist who was passing from a passenger car to the baggage car was thrown from the car and killed, the question of negligence of the railroad company was for the jury. (Sulger v. Philadelphia & R. Ry. Co., 91 A. 235.)

Animals Trespassing on Right of Way.—(Pennsylvania.) An owner of animals trespassing on the right of way of a railroad cannot recover for injuries sustained by them unless he shows gross negligence on the part of the railroad company. (Devereaux v. Philadelphia & R. R. Co., 91 A. 235.)

Property Owner's Right to Private Crossing.—(Pennsylvania.) A property owner's right to a private crossing over a railroad track, where the right of way has been acquired by condemnation, is a vested right. (Green v. Baltimore & O. R. Co., 91 A. 248.)

Injury to Hidden Trespasser.—(Pennsylvania.) Where a boy hid himself in a car, and was injured from the starting of the train at the signal of a flagman who did not know of the boy's presence, the fact that the boy was of tender years did not render negligent the flagman's failure to discover him; the standard of duty in case of concealed trespassers being the same whether the person injured be an adult or a child. (Schleich v. Baltimore & O. R. Co., 91 A. 253.)

Action for Loss of Goods.—(Delaware.) In an action by a shipper to recover for loss of goods under Interstate Commerce Act (U. S. Compiled Statutes, 1901), requiring any interstate carrier to issue a bill of lading, and making it and any other carrier to which it may be delivered liable "to the lawful holder thereof" for any loss, the holding of the bill of lading is not a prerequisite to such right or action; but the statute extends its remedy directly against the carrier to whom goods are delivered for shipment in behalf of such shipper, or one who has succeeded to his rights. A bill of lading is not a contract of shipment, but evidence thereof. (Bowden v. Philadelphia, B. & W. R. Co., 91 A. 209.)

Where View of Track is Obstructed.—(Delaware.) If at a railway crossing there are obstructions of such a nature that a traveler on the highway is prevented from seeing an approaching train, or if the peculiar conditions surrounding the crossing prevent a traveler using due care and caution from hearing the blowing of the whistle, the degree of care required on the part of the railroad company to warn travelers of the approach of trains is correspondingly increased. (Lofland's Brickyard Crossing Cases, 91 A. 285.)

Recovery Notwithstanding Contributory Negligence.—(New Hampshire.) Where railroad employes, after a person was in a dangerous situation at a farm crossing, could have given warnings which they failed to give, and the person might have escaped in safety had they been given, negligence of the person in driving upon the track was immaterial and a full recovery can be had against the railroad company. (Tyrrell v. Boston & M. R. R., 91 A. 179.)

Employers' Liability Act.—(New York.) The provisions of the Federal Employers' Liability Act (U. S. Comp. Stat. Supp. 1911) provides that railroad employes shall not be considered guilty of contributory negligence where the railroad company's violation of any statute enacted for the safety of employes contributes to an injury or death, applies only to violations of federal statutes such as the Safety Appliance Act (U. S. Comp. Stat. 1901). (Gee v. Lehigh Valley R. Co., 148 N. Y. S. 882.)

Not Within Employers' Liability Act.—(New York.) A yard switchman injured while in moving a freight car left in the yard by a fast train was not within the Federal Employers' Liability Act, where the cars during the trip did not pass out of the state and contained no freight for interstate commerce. (Norton v. Erie R. Co., 148 N. Y. S. 769.)

The Test of the Engagement in Interstate Commerce.—(New York.) The test of whether a railroad employe is engaged in interstate commerce, so as to be within the protection of the Federal Employers' Liability Act, is the nature of the work being done at the time of the injury and not what the employe expects to do after completing his task. He is within the act only where his relation to traffic at the time of his injury was so direct that such injury tended to stop or delay the movement of a train engaged in interstate commerce. His engagement in a general repair shop at the time of the injury will not bring him within the benefits of the act. (Shanks v. Delaware, L. & W. R. Co., 148 N. Y. S. 1034.)

Hours of Labor for Signalmen.—(New York.) The New York Labor Law, forbidding the employment of railway signalmen for more than eight hours in every 24 hours, is suspended as to employes engaged in interstate commerce by the Federal Hours of Service Law (34 Stat. 1415), limiting the time of such employment to 9 hours in each 24, since, Congress having legislated upon the subject, its legislation is exclusive, and there is no room for state legislation. (People v. New York Cent. & H. R. R. Co., 148 N. Y. S. 495.)

Issuance of Bill of Lading.—(Alabama.) An agent of a carrier has no authority to issue a bill of lading for goods before the same are received for shipment, and a carrier is not responsible for the unauthorized acts of an agent issuing a bill of lading before receiving the goods. (Louisville & N. R. Co. v. National Park Bank of New York, 65 So. 1003.)

State Has No Power to Exclude Railway from Its Territory.—(Mississippi.) While a state for any reason can exclude from doing business within its borders a foreign corporation authorized only to do a purely intrastate business, its power over a corporation which is an instrument of interstate commerce, as a foreign railroad corporation engaged in doing both intrastate and interstate business, is subject to limitations, one of which is that it cannot deprive it of a right guaranteed by the Federal Constitution, as the right to remove a suit from a state court to a federal court, and therefore it cannot, as attempted by Laws of 1908 c. 122, penalize it, by prohibiting it from doing intrastate business, merely because it has exercised such right of removal. (Louisville & N. R. Co. v. State, 65 So. 881.)

No Recovery Where Deceased Employe Left No Dependent Relative.—(South Carolina.) There can be no recovery for the death of an employe of a railroad company engaged in interstate commerce, who leaves no dependent relatives, under a state statute giving a right of action in favor of relatives whether dependent or not, as the Federal Employers' Liability Act, limiting the right of action to dependent relatives, is paramount and exclusive, and the liability of interstate carriers for injuries to their employes engaged in interstate commerce must be tested solely thereby. (Jones v. Charleston & W. C. Ry. Co., 82 S. E. 415.)

Release from Liability.—(Iowa.) A release of one railway company from all liability for an injury was not conclusive as to another company, where the injury was due solely to the negligence of the latter company. (Stearns v. Chicago, R. I. & P. Ry. Co., 148 N. W. 128.)

Equipment of Cars.—(Iowa.) Under Code, sec. 2082, requiring automatic brakes for railroad cars, the brakes need not, as a matter of law, be coupled up so as to be operated by the engineer, especially where the engine is switching or spotting cars. (Stearns v. Chicago, R. I & P. Ry. Co., 148 N. W. 128.)

Proper Remedy to Compel Compliance With Law.—(Michigan.) Mandamus is an appropriate remedy to compel compliance by a railroad company of a proper order of the Railroad Commission. (Michigan Railroad Commission v. Detroit & M. Ry. Co., 148 N. W. 385.)

Railroad Not Liable for False Imprisonment.—(California.) Where a special officer, appointed on the application of a railroad company, arrested without a warrant, an employe of the company on a charge of larceny, after being informed by a participant in the larceny that the employe assisted in the crime, the company was not liable for the false arrest of the employe. (Redgate v. Southern Pac. Co., 141 P. 1191.)

Gratuitous Transportation.— (Washington.) Where the transportation of a passenger is a mere gratuity, the carrier is not liable for injuries sustained by such passenger; but if the person injured is a passenger for hire then the carrier is liable. (Hagerman v. Puget Sound Electric Ry. Co., 141 P. 1027.)

Oklahoma's Two-Cent Fare Case.—The trial on its merits of the Oklahama two-cent railroad fare case, which has been on the dockets for two years, is set for October 1st. Because of delay in instituting the suit Oklahoma was not included in the United States Supreme Court decision rendered several months ago holding the two-cent laws and commission orders in Missouri, Kansas and Nebraska constitutional. Because of this fact all Oklahoma railroads still charge three cents a mile for all tickets sold to interstate purchasers, although intrastate fares in Oklahoma are only two cents, and only two cents in all the adjoining states.

The railroads expect this to be a decisive test and efforts will be made to prove that two-cent fares are not remunerative to the companies. The recent decision is expected to be offered in evidence, if this is permitted by the court.

The outcome of this case is considered of great importance by the railroads.

Decisions of Courts Affecting Railway Labor.—The Federal Bureau of Labor Statistics has published its annual summary of judicial decisions and opinions as to the construction and application of labor laws and of the rules of the common law. The reference in this publication to the decisions construing the federal statute relating to the liability of interstate railroads for injuries to their employes, is of particular interest to our readers. The chief point involved in these decisions is the scope of this law and among the employes held to be within its provisions are a brakeman getting ice to cool hot boxes on his train, a truckman loading a detached car with interstate freight, a pumpman at a water station, a repairman working on an engine tender on a siding, a member of a switching car placing oil in the car to furnish fuel for an interstate locomotive, a yard clerk taking the numbers of the cars on an interstate train, and a track repairer injured by an interstate train while at work on a bridge.

ORGANIZATION NOTES.

W. C. Maxwell Addresses St. Louis Traffic Club.—In an address before the St. Louis Traffic Club on September 14th, W. C. Maxwell, general traffic manager of the Wabash Railroad, said passenger rates of railroads between St. Louis and Chicago will be increased $1, December 1st, and the rates between St. Louis and New York will be advanced $2. This proposed increase, he said, is at the suggestion of the Interstate Commerce Commission.

Mr. Maxwell said the earnings of the passenger department of the Pennsylvania Railroad last year as reported was less than ½ of one per cent.

Mr. Maxwell, in part, said: "Now as to the general situation—evidence shows that the carriers spent about $200,000,000 a year for additions and betterments the last ten years. During a good part of this period, especially the latter part, the expenditures of many of the roads were very much below what they should have been. During the last eighteen months, expenditures for additions and betterments were reduced to a minimum, and this, in my opinion, is one of the leading causes for the depression in business."

Mr. Maxwell said the railroads need at least $250,000,000 a year for the next ten years for additions and betterments to their properties and to care for growing commerce.

"To give you an illustration," he said, "twenty-eight important roads last year earned 1.4 per cent on their property investment. This is not anything like enough to pay the interest on the bonds of these properties. Will any of you present to-day, invest your money in a business of this sort? The problem is to find a way to make railroad investments attractive enough to pay a reasonable return, otherwise the carriers can not get the money.

"Some constructive legislation helpful to the railroads is necessary both on the part of national and state bodies, otherwise a depressed condition of this industry and all industries dependent on the railroads is likely to continue for many years."

Forthcoming Meeting of Electric Railway Association.—The American Electric Railway Association will make a distinct departure when at its annual convention in Atlantic City, October 12th to 16th, a committee consisting of some of the strongest men in the electric railway field will present for consideration a platform of principles embracing what the committee believes to be a statement of the relations that should exist between public utilities and the public.

Public relations is an important topic in public utilities' affairs at this time. Measures aimed at public utility corporations have made it of importance to operators and investors that the case of the utility should be properly presented to the people.

This is one of the many important matters that will be taken up at the coming convention. The association represents practically every important electric railway on the North American continent and a very large number in South America. An attendance of between four and five thousand railway men is expected at Atlantic City, and the exhibit of electric railway appliances and apparatus will cover over seventy thousand square feet of floor space on one of the piers. The association consists of a parent organization and four allied bodies covering the engineering, accounting, claims and transportation departments of railways, so that during the five days of the meeting there will be five conventions in continuous session and over seventy committees will report. Among the speakers will be R. B. Stearns, vice-president of the Milwaukee Electric Railway and Light Company, who will describe the experiment now being conducted in that city with the zone system of railway fares.

This is the system in general use in European countries instead of the flat-rate system common to the United States. Milwaukee is the first city where it has ever been carried out on anything like an extensive scale, and railway men are watching the experiment with the closest interest, as a possible remedy for conditions arising in this country from the expansion of the cities, the corresponding growth in the length of haul and the consequent cutting down of the per passenger revenue, which it is believed has had much to do with the present depression in railway extension.

LEGISLATION.

Railway Legislation During 1914.—The Special Committee on Relations of Railway Operation to Legislation, has issued its Bulletin No. 64, which contains a statement showing the classification of bills introduced and laws enacted, relating to railway operation, in the state legislatures which were in session in 1914. It will be noted according to the following table that 236 bills of this character were introduced of which 27 were enacted. While there were not as many legislatures in session in 1914 as in 1913, nevertheless the new bills introduced and the laws enacted were proportionally much smaller in number during the current year which is a development devotedly to be thankful for.

A comparison with the three preceding years may be of interest and is herewith appended:

	1914	1913	1912	1911
Legislatures in session	*14	42	*19	37
Bills introduced	236	1395	292	512
Laws enacted	27	230	48	**

*Including special sessions.
**This data not compiled in 1911.

The following is a classification of the bills introduced and enacted during 1914 and according to states and character of subject.

Progress of the Railroads Securities Bill.—Advices from Washington indicate the possibility that the Railroads Securities Bill may go over until the next session of Congress. While the matter has not yet been definitely decided, it was understood that of the three so-called trust bills now before Congress, the railroad bill is the one most likely to be postponed until the next session.

Bill to Equalize Rates on Vegetables and Fruits.—A bill to equalize transportation rates on vegetables and fruits has been introduced in Congress by Representative Frank Clark of

BILLS INTRODUCED AND LAWS ENACTED IN STATE LEGISLATURES, RELATING TO RAILWAY OPERATION.

(SESSIONS OF 1914)

Subjects	Colo.*	Ga.	Ky.	La.		Md.		Mass.		Miss.		N. J.		N. Y.	R. I.	S. Car.		Va.		Total	
	Introduced	Introduced	Introduced	Introduced	Enacted	Introduced	Enacted	Introduced	Enacted	Introduced	Enacted	Introduced	Enacted	Introduced	Introduced	Introduced	Enacted	Introduced	Enacted	Introduced	Enacted
Employees—																					
Full crews	..	1	1	2	..	..	..	1	..	1	1	..	..	1	..	2	..	1	..	10	1
Hours of service ...	..	..	..	..	..	6	1	4	2	3	1	2	..	2	..	..	..	1	..	18	4
Service letters and time of payment ..	..	1	5	6	1	1	..	3	..	5	2	1	..	..	..	2	1	2	..	26	4
Terms of employment	..	2	2	7	3	..	..	9	1	11	1	1	..	6	6	2	..	4	1	50	6
Experience of	..	..	..	1	..	..	..	..	..	2	..	..	..	..	1	..	..	..	..	4	..
Shelter for	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	2	1	1	..	4	1
Arbitration—																					
a. Compulsory	2	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	..	..	..	6	..
b. Voluntary	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Equipment—																					
Caboose	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	2	1
Headlights	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	3	1	6	1
Safety appliances ...	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	..	..	..	3	..
Repair of	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Appliances required..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	3	1	4	1
Passenger Trains—																					
To be run	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Stops	..	..	1	..	..	..	..	..	..	..	..	..	..	2	..	2	1	..	..	5	1
Equipment of	..	..	1	..	..	..	..	1	..	1	..	..	..	2	1	2	..	..	..	8	..
Baggage	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..
Make-up of	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	2	..
Freight Trains—																					
Speed of live stock ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	2	1	..	..	..	4	..
Sunday trains	..	4	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	5	..
Handling of explosives	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..
Make-up of	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..	3	..
Cars—																					
To be furnished	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Demurrage	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..
Block and Other Signals—																					
Block and interlock .	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	..	2	..
Crossings—																					
Required	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	1	..	..	..	2	..
Protection	..	..	1	..	..	..	..	..	..	..	..	3	1	1	..	..	..	1	..	6	1
Separation of grades.	..	..	..	..	..	3	..	..	..	1	..	3	..	3	..	1	..	1	..	12	..
Maintenance of Way— General—																					
Track scales and weighing	..	..	1	..	..	..	..	..	..	1	..	..	..	1	..	..	..	..	..	3	..
Burning weeds	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Stations—																					
Required	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	..	..	2	2
Equipment of	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	..	3	..
Track connections ..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	2	1	4	1
Hospitals and Relief Departments	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	..
Claims—																					
When to be paid ...	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	1	2	1
Trespassers	..	..	1	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	1
Reports—																					
Accidents	..	..	1	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	3	..
Miscellaneous	..	4	1	5	..	..	..	..	..	2	..	1	..	2	..	5	1	1	..	21	1
Total	2	13	18	31	5'	13	1	21	3	31	5	12	1	23	15	28	6	29	6	236	27

*Special sessions.

Florida. The Interstate Commerce Commission is directed to fix a uniform rate over all common carriers on packages of fixed dimensions and weight for the same distance of shipments from the initial point. Rates for express companies and steamship lines are also to be fixed by the Commission.

LABOR.

The Arbitrators in the Western Wage Controversy.—W. L. Park, vice-president of the Illinois Central, and H. E. Byrum, vice-president of the Burlington, have been chosen to represent the western roads in the arbitration of the enginemen's wage question. The enginemen have selected F. A. Burgess of the engineers and Timothy Shea of the firemen as their representatives.

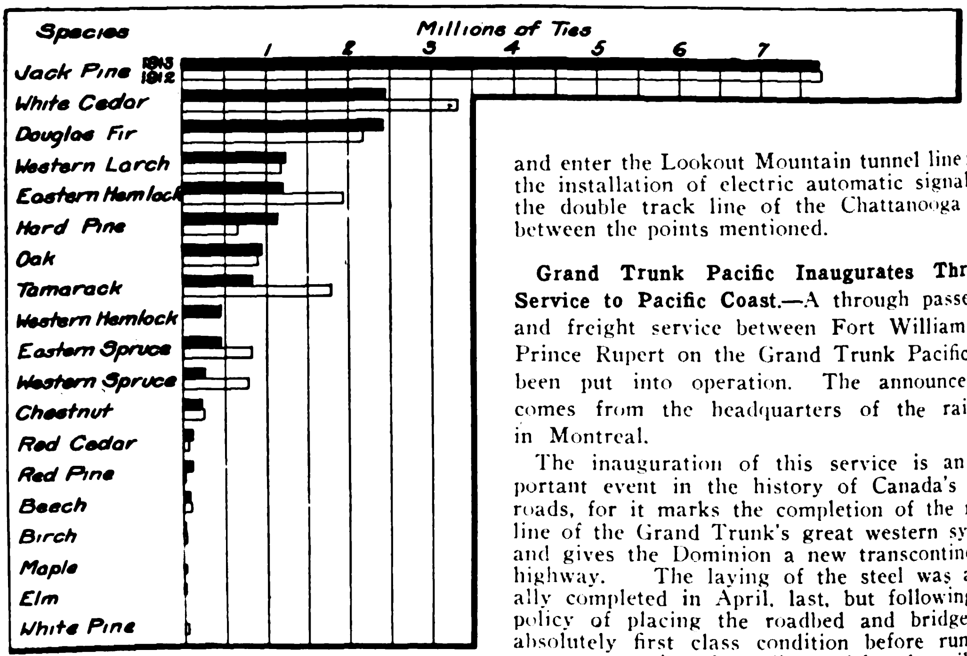
EQUIPMENT.

Railway Ties Purchased in Canada.—The following diagram shows in an interesting manner, the number of railway ties purchased in Canada during the years 1913 and 1912. It is reprinted from the "Canadian Railway and Marine World" of September. The decrease in the number of all ties purchased in 1913, was 6.7 per cent of the total of 1912. As indicated by the diagram, out of twenty kinds of wood reported, the two most important, jackpine and white cedar, were reported in smaller quantities than in 1912, as were seven of the other kinds of wood. The use of Douglass fir increased and formed 12.2 per cent of the total compared with 10.2 per cent in 1912. The employment of this wood has constantly increased since 1908. Four other British Columbia species, namely, Western larch, spruce, hemlock and red cedar, all show increases over the 1912 figures. Oak ties, of which the greater part are imported from the United States, were purchased in increased numbers, but all the other hard woods with the exception of elm, showed decreases. During 1913, the Canadian Railways imported 14.6 per cent of their ties for which they paid on an average of thirteen cents a tie more than for the native article. The average price of ties of all classes was practically the same in 1913, as in the preceding year.

CONSTRUCTION.

Southern Railway Improvements in Tennessee.—The Southern Railway Company has under way the construction of a double track line through the Lookout Mountain tunnel from a connection between the Chattanooga Belt Railway to a point .4 of a mile west of the west portal of the Lookout Mountain tunnel, where a connection is being made with a line being constructed to Wauhatchie by the Wauhatchie Extension Railway Company. This line is to be used by the trains of the Alabama Great Southern and the Southern Railway Company. In this connection, an expenditure of $80,000 has also been authorized on the Belt Railway of Chattanooga in order to make connection with the Extension line now being completed through the tunnel referred to.

The work to be done includes the construction of second main line track between the points mentioned; the extension of the present interlocking plant at East End Avenue so as to cover the additional tracks proposed; the construction of an interlocking plant at crossing of tracks of the Central of Georgia Railway and the Chattanooga Belt Line near Missionary Avenue; the construction of interlocking plant near the south end of yards where A. G. S. trains will leave the track of the Chattanooga Belt and enter the Lookout Mountain tunnel line; and the installation of electric automatic signals on the double track line of the Chattanooga Belt between the points mentioned.



Comparative Diagram of Railway Ties Purchased in Canada During 1912 and 1913.

Grand Trunk Pacific Inaugurates Through Service to Pacific Coast.—A through passenger and freight service between Fort William and Prince Rupert on the Grand Trunk Pacific has been put into operation. The announcement comes from the headquarters of the railway in Montreal.

The inauguration of this service is an important event in the history of Canada's railroads, for it marks the completion of the main line of the Grand Trunk's great western system and gives the Dominion a new transcontinental highway. The laying of the steel was actually completed in April, last, but following its policy of placing the roadbed and bridges in absolutely first class condition before running passenger trains the railway delayed until the present time the inauguration of this through service.

Enormous Dry Dock for Prince Rupert, B. C.—Good progress is being made with the construction of the big Grand Trunk Pacific dry dock at Prince Rupert. This dock, costing $3,000,000, will have an important national value, as it will be able to handle the largest vessels, either naval or mercantile, afloat on the Pacific Ocean.

The dock will have in all twelve pontoons and the first of these was launched this week. It is 130 feet long and exclusive of other fittings has 300,000 feet of timber in its construction. A second pontoon is to be launched on the 22nd inst., and six pontoons will be completed by January 1st. The capacity displacement of the series will be 20,000 tons and each pontoon will have two powerful centrifugal pumps, so that, when the ship is in place, the water can be rapidly pumped out and repair work begun. The dock is so arranged that it can be used in three separate units or in any combination that is desired.

Double Tracking the Southern Railway in North Carolina.—Southern Railway Company has just awarded contracts for construction of thirty-six miles of double track on the Danville Division between Greensboro and Pelham, N. C., which will give it a continuous double track line across the state of North Carolina from Charlotte to Danville, Va. Contracts have also been recently let for the construction of twenty-one miles of double track on the Alabama Great Southern between York, Ala., and Meridian, Miss., and on the C. N. O. and T. P. for nine miles between New River and Sunbright, Tenn.

TRAFFIC.

Improvement in Export Trade.—Improvement is noted in the export trade from various points along the Atlantic Coast. While commerce with Germany still remains practically suspended, steamers are now leaving with some regularity for a number of European ports, particularly those of Great Britain. This improvement is clearly indicated in the following notice published on September 5th, by the Foreign Freight Department of the Boston and Maine Railroad.

Prepayment of inland charges will not be demanded on through export bills of lading for export freight to ports or destinations in England, Ireland, Scotland or Wales, via Steamship Lines operating from the port of Boston, or to Sweden and Norway via the Sweden-Norway Line, except that prepayment or guarantee of inland charges is required on apples and other perishable fruits and vegetables.

Traffic Conditions Improving in Mexico.—Telegrams from N. M. Leach, general traffic manager of the Texas & Pacific and International & Great Northern, and H. C. Dinkins, Latin American agent for the Gould Lines, to the Missouri Pacific Iron Mountain assert that affairs in Mexico have reached a state where traffic with the United States is being resumed. The International & Great Northern in conjunction with the Texas & Pacific and Iron Mountain, previous to the troubles in Mexico, ran through trains via Laredo, Texas, to the City of Mexico in connection with the National Railways of Mexico. The war there caused a temporary suspension of the traffic. Mr. Dinkins telegraphs that it is believed that the Constitutionalists, who have possession of the railroads, will in a short time turn the lines back to the National Railways of Mexico. In the meantime, Mr. Leach wires that arrangements have been made with the Constitutionalists for an interchange of traffic between the Gould Lines and the Mexican Railways at Laredo. All freight, both ways, is transferred in the International & Great Northern yards at Laredo. As there are no through rates in effect, through bills-of-lading cannot at present be issued to or from points in Mexico. Bills of lading will be issued only to and from the Mexican border at Laredo, and it will be necessary for shippers to make their own arrangements for the payment of freight charges, transfer of equipment, custom house entries, bills of lading to destination, etc.

Reduction in Sugar Rates from the Pacific Coast.— Some time ago the Southern Pacific Company and other California roads applied to the Interstate Commerce Commission for permission to reduce their rates on sugar to Chicago from California producing points. The Commission has just granted the application.

This action on the part of the carriers marks a new chapter in the industrial development of California and shows their disposition to forego temporary revenue for the benefits accruing to California by the extension of the zone within which the industries may profitably compete for business.

The voluntary sacrifice of revenue on the part of the carriers was made to increase the production of sugar in California, broaden the market of the California refineries, give employment to a large number of men and increase the tribute which the East will pay California as against buying in New York.

A gratifying result of the railroads' effort appeared a day or so after the adjustment was sanctioned by the Commission when one of the largest refineries in the state announced an increase in the annual capacity of its plants from 375,000 tons to 575,000 tons. At the same time, there came word from Honolulu that the entire Hawaiian sugar crop would be refined here.

Trade with Europe Resumed.—After a series of meetings during the latter part of August, the Trunk Line Association has decided to resume the acceptance of through bills-of-lading to Cuba and Porto Rica and to all European ports and lines in the west have been duly notified to this effect. With regards to Cuban ports the acceptance will be without qualifications. All other ports, however, will be subject to certain war clauses and in all instances prepayment of inland charges will be required, this being exacted by the steamship lines and not by the rail carriers.

The present rate of exchange as named in the bills will be ignored, agents being instructed that they must insert this to correspond with what it is on the day the bills of lading are issued, the information to be ascertained from the steamship agents, as it may fluctuate from day to day.

Difficulties in Readjusting Western Passenger Rates.—At a meeting held in Chicago on September 15th, for the purpose of arriving at some plan by which railways operating in Chicago could agree on an increase in passenger rates, difficulty arose on account of the objection raised by the Chicago lines on the ground that it would be impracticable to make interstate rates higher than intrastate rates. No definite action was taken.

Increase in Passenger Fares from Chicago Eastward.—General advances in interstate passenger fares on all railroads operating eastward from Chicago are planned to take effect as soon as the tariffs can be prepared and published. The tariff bureaus representing the Eastern lines are preparing schedules based upon 2½ cents a mile for all interstate journeys and these schedules will be filed with the Interstate Commerce Commission.

The railroads contend that they are raising passenger rates to conform with the suggestions of the Interstate Commerce Commission, which recently held that passenger rates were too low.

Time Consumed in Panama Canal Passage.—The first steamship to pass through the Panama Canal, the Cristobal, made the trip from the Atlantic to the Pacific in eleven and a half hours.

The return trip, however, was made in eight and a half hours which probably marks the average time that will be consumed by merchantmen when all of the machinery of the canal is in smooth operation.

Colonist Rates to Coast.—The St. Paul, in common with the other western roads, has established a one-way colonist rate of $38 to the Pacific coast. These tickets will be on sale the last of next month for two weeks, but inquiries have not been numerous, according to St. Paul reports.

Parcel Post Business.—The Electric Vehicle Association of America recently appointed a committee on parcel post delivery, the duties of which were to collect statistics on parcel post deliveries, and present arguments for such deliveries to be made by electric vehicles.

Data on parcel post deliveries has been received from fifty cities with an aggregate population in excess of 25,000,000. These statistics show that from October 1st to October 15th, 1913, nearly 11,000,000 parcels were mailed out from these cities, while 3,500,000 parcels were received in the same time. The average weight per parcel was 1 pound 11 ounces, and the average postage was 10 cents per parcel.

Chicago Roads to No Longer Absorb Switching Charges.—All the Chicago roads with the exception of the Wabash, have definitely announced that, effective after October 1st, they would no longer absorb switching and lighterage charges, and filed their new tariffs with the Interstate Commerce Commission at Washington. The State Public Utilities Commission has suspended these cancellations of joint rates as far as intrastate traffic is concerned.

The action of the railroads is right in line with the Interstate Commerce Commission's recent suggestion that they abolish all free services to shippers.

Panama Railroad to Discontinue Freight Carriage.—All carriers have been notified by the Panama Railroad Company that the previous working arrangement whereby the railroad acted as an intermediate carrier would be terminated at the end of ninety days. After that the steamship lines will have to make their own arrangements for the transfer of cargo across the Isthmus, and the railroad will serve as a co-carrier only in case of emergency. The ninety-day order went into effect with the opening of the canal.

Eastern Trunk Lines Increase Mileage Rate.—Eastern Trunk Lines have filed with the Interstate Commerce Commission notices necessary for an advance in passenger rates. The first notice covered only the charges for open and interchangeable mileage books. On and after October 1st, these are to be at the rate of 2¼ cents a mile instead of 2 cents a mile as heretofore. Advances on other passenger rates are under consideration. Formal notice is to be served on the Commission in respect to those later.

Union Pacific Defers Ogden Gateway Order.—Pressure brought to bear by officials of other railroads following the closing of the Ogden gateway to the Denver & Rio Grande Railroad by the Union Pacific, has caused the Union Pacific to postpone its action. The Union Pacific recently notified the Trans-Missouri Tariff Bureau to eliminate the routing of through passengers over the Rio Grande between Denver and Ogden.

Lower Rates for Canada.—A dispatch from Montreal states that the lower freight rates ordered by the Railway Commission several weeks ago are now effective. The case arose from protests made by three prairie provinces on the ground that Canadian Pacific was granting lower rates to Eastern shippers. After hearings lasting many months, the Commission decided that the railroads were justified in charging higher rates in the West than in the East, but at the same time a general reduction was ordered in Western rates on both east and westbound business. In Manitoba the reductions averaged 10½ per cent. Coal rates were reduced fifty per cent.

August Anthracite Shipments.—The shipments in anthracite coal in August as reported by the chief of the Bureau of Anthracite Statistics, was 5,483,743 tons, as compared with 5,369,900 tons in August, 1913, an increase of 113,843 tons. Shipments for the year to date, eight months, were 43,821,389 tons, as against 45,709,606 tons in the same period of last year, a decrease of 1,888,217 tons.

Imports and Exports for August.—The Bureau of Statistics at Washington has published its returns for last month's foreign commerce of the United States. It shows that August exports of merchandise amounted to only $110,337,000 as against $154,082,000 in July and $187,909,000 in August last year. No single month since the middle of 1909 showed so small a total of merchandise exports for the country.

Imports of merchandise suffered to a much smaller extent from the trade blockade than did exports. They were $129,400,000 against $160,178,000 in July and $137,651,000 in August, 1913. They were the smallest of any month since the close of 1911.

Of the August imports, 61.8 per cent entered free of duty, compared with 50.9 per cent in August, 1913, and 54.3 per cent in August, 1912. Of the month's exports, $108,188,732 consisted of domestic merchandise.

September Traffic Better.—Trunk lines have announced that the September traffic reports show an increase of business over the first half of August, due mainly to resumption of activities in industries and to the grain shipments. Business is still below normal, the reports say, but the outlook is brighter.

ELECTIONS AND APPOINTMENTS.

Executive.

N. J. Conran, president, St. Louis & Missouri Southern Railway. Headquarters, New Madrid, Mo.

William J. Cunningham, president's assistant, Boston and Maine Railroad. Headquarters, Boston, Mass.

Thornwell Fay, assistant to receivers. International and Great Northern Ry.

Lawrence V. Grield, assistant to president, Kansas City, Mexico and Orient Railroad. Headquarters, Kansas City, Mo.

Hale Holden, president, Chicago, Burlington and Quincy R. R. Headquarters, Chicago, Ill.

Harry R. Kurrie, president, Chicago and Alton R. R. Headquarters, Chicago, Ill.

E. T. Lamb, president, Atlanta, Birmingham & Atlantic Railroad. Headquarters, Atlanta, Ga.

Brooks Morgan, vice-president, Atlanta, Birmingham and Atlantic Railroad. Headquarters, Atlanta, Ga.

Duval West, receiver, San Antonio, Uvalde and Gulf Railway.

Legal.

P. B. Warren, general counsel, Chicago, Peoria and St. Louis R. R. Headquarters, Springfield, Ill.

Financial.

W. F. Ingram, assistant treasurer, Southern Pacific Co. Headquarters, San Francisco, Cal.

F. K. Mays, secretary and treasurer, Atlanta, Birmingham and Atlantic. Headquarters, Atlanta, Ga.

F. J. Wilson, treasurer, Chicago, Peoria and St. Louis R. R. Headquarters, Springfield, Ill.

Accounting.

H. W. Berger, auditor, Chicago, Peoria and St. Louis Railroad. Headquarters, Springfield, Ill.

T. V. Pomar, general auditor and assistant treasurer, Florida East Coast Railway. Headquarters, St. Augustine, Fla.

Engineering and Mechanical.

H. E. Astley, division engineer, Midland Division, New York, New Haven and Hartford Railroad.

M. K. Barnum, superintendent of motive power, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

J. S. Buckley, resident engineer's office, Southern District, Southern Railway. Headquarters, Birmingham, Ala.

Joseph Billingham, superintendent of motive power, Grand Trunk Railway. Headquarters, Transcona, Man.

R. A. Billingham, master mechanic, Tennessee Central. Headquarters, Nashville, Tenn.

E. E. Chrysler, superintendent of shops, Oregon Short Line Railroad. Headquarters, Pocatello, Idaho.

C. M. Buck, division engineer, Atchison, Topeka and Santa Fe Railway. Headquarters, Emporia, Kans.

W. A. Christian, senior civil engineer in charge of roadway and track department, Central District, Division of Valuation, Interstate Commerce Commission. Headquarters, Chicago, Ill.

J. E. Epler, superintendent of motive power, Chicago and Eastern Illinois Railroad. Headquarters, Danville, Ill.

D. W. Gross, valuation engineer, Atlantic Coast Line Railroad. Headquarters, Wilmington, N. C.

T. C. Hudson, division master mechanic, Canadian Northern Railway. Headquarters, Joliette, Que.

A. J. Ironsides, district master mechanic, Canadian Pacific Railway. Headquarters, Saskatoon, Sask.

H. E. Kellenberger, senior signal engineer, Central District, Division of Valuation, Interstate Commerce Commission. Headquarters, Chicago, Ill.

J. M. Kilfoyle, master mechanic, St. Louis Southwestern of Texas. Headquarters, Tyler, Texas.

J. A. Killian, Jr., resident engineer, Southern Railway. Headquarters, Charlotte, N. C.

T. S. Lowe, master mechanic, Lake St. John Division, Canadian Northern Railway. Headquarters, Limoilou, Que.

J. A. Lingstrand, senior architect, Central District, Division of Valuation, Interstate Commerce Commission. Headquarters, Chicago, Ill.

John A. Marshall, road foreman of engines, Northern Pacific Railroad. Headquarters, Duluth, Minn.

Charles Manley, master mechanic, Missouri and North Arkansas Railroad. Headquarters, Harrison, Ark.

E. Meyers, roadmaster, Ottawa Division, Canadian Northern Railway.

W. J. Miller, superintendent of motive power, St. Louis Southwestern Railway. Headquarters, Pine Bluff, Ark.

W. S. Moseley, mechanical engineer, Carolina, Clinchfield and Ohio. Headquarters, Erwin, Tenn.

F. D. Nauman, division engineer, Baltimore and Ohio Railroad. Headquarters, Garrett, Ind.

William O'Brien, master mechanic, Illinois Central Railroad. Headquarters, Clinton, Ill.

O. A. Redinger, resident engineer, Middle District, Southern Railway. Headquarters, Knoxville, Tenn.

R. L. Pearson, track supervisor, Providence Division, New York, New Haven and Hartford R. R. Headquarters, Providence, R. I.

G. F. Shull, acting master mechanic, Carolina, Clinchfield and Ohio Railroad. Headquarters, Erwin, Tenn.

G. I. Sitton, resident engineer, Northern District, Southern Railway. Headquarters, Richmond, Va.

Paul A. G. Tilmont, assistant roadmaster, Northern Pacific Railway. Headquarters, Tacoma, Wash.

W. E. Van Hook, office engineer, Central District, Division of Valuation, Interstate Commerce Commission. Headquarters, Chicago, Ill.

W. D. Warren, division engineer, New York, New Haven and Hartford Railroad. Headquarters, Providence, R. I.

T. E. White, supervisor of track, District No. 1, Louisiana and Arkansas Railway. Headquarters, Minden, La.

H. A. Woods, chief engineer, Grand Trunk Railway. Headquarters, Winnipeg, Man.

C. F. Yardley, division engineer, Central New England. Headquarters, Hartford, Conn.

Operation.

H. E. Allen, superintendent, Louisiana Division, Chicago, Rock Island and Pacific. Headquarters, Eldorado, Ark.

R. S. Allison, assistant trainmaster, Louisville and Nashville Railroad. Headquarters, Knoxville, Tenn.

F. B. Barber, assistant superintendent, Cleveland and Toledo Divisions, Wheeling and Lake Erie Railroad. Headquarters, Brewster, Ohio.

Fred N. Beal, general manager, Sandy River & Rangeley Lakes. Headquarters, Phillips, Me.

J. A. Caldwell, trainmaster, Gulf Division, International and Great Northern Ry.

E. E. Chrysler, superintendent of shops, Oregon Short Line. Headquarters, Pocatello, Idaho.

A. M. Deverell, chief dispatcher and division operator, Minnesota Division, Northern Pacific Railway.

C. W. Fisher, chief train despatcher, Canadian Pacific Railroad. Headquarters, Edmonton.

Gustave Gullickson, roadmaster, Northern Pacific Railroad. Headquarters, Forsyth, Mont.

W. S. Hall, trainmaster, Canadian Pacific Railroad. Headquarters, Red Deer, Alta.

G. A. Hoag, superintendent of car service, Canadian Northern Railway. Headquarters, Montreal, Que.

W. C. Hurst, general manager, Chicago, Peoria and St. Louis R. R. Headquarters, Springfield, Ill.

James B. King, trainmaster, Taylor sub-division, International and Great Northern Railway. Headquarters, Palestine, Texas.

H. H. Maher, trainmaster, Lake Superior Division, Northern Pacific Railway. Headquarters, Duluth, Minn.

C. E. Mansfield, chief train despatcher, Canadian Pacific Railway. Headquarters, Calgary, Alta.

J. G. Metcalfe, Jr., trainmaster, Louisville and Nashville Railroad. Headquarters, Paris, Ky.

D. J. Morris, assistant superintendent of transportation, Wheeling and Lake Erie Railroad. Headquarters, Brewster, Ohio.

David B. Mulligan, general superintendent, Grand Trunk Pacific systems. Headquarters, Winnipeg, Man.

L. F. Newton, trainmaster, Northern Pacific Railroad. Headquarters, Mandan, N. D.

P. E. Pournelle, trainmaster and roadmaster, Florida Railway. Headquarters, Live Oak, Fla.

D. E. Nichols, trainmaster, Minnesota Division, Northern Pacific. Headquarters, Staples, Minn.

H. H. Smith, car accountant, Canadian Northern Railway. Headquarters, Toronto, Ont.

T. D. Stafford, assistant superintendent, New Orleans, Texas and Mexico Railroad. Headquarters, DeQuincy, La.

R. T. Taylor, trainmaster, Lake Superior Division, Northern Pacific Railway. Headquarters, Duluth, Minn.

J. L. Terry, general manager, Denver, Laramie & Northwestern R. R. Headquarters, Denver, Colo.

A. E. Walker, superintendent, Arkansas Division, Chicago, Rock Island and Pacific Railroad. Headquarters, Little Rock, Ark.

Traffic.

C. I. Allen, commercial agent, Atlanta, Birmingham and Atlantic Railroad. Headquarters, Jacksonville, Fla.

H. S. Baggs, traveling passenger agent, Atlanta, Birmingham and Atlantic Railroad. Headquarters, Atlanta, Ga.

W. D. Clary, soliciting agent, Louisville and Nashville Railroad. Headquarters, Cincinnati, Ohio.

Willis Callaway, commercial agent, Norfolk and Western Railway. Headquarters, Jacksonville, Fla.

J. J. Coburn, soliciting agent, Louisville and Nashville Railroad. Headquarters, New Orleans, La.

A. B. Cutts, general freight and passenger agent, Minneapolis and St. Louis Railroad. Headquarters, Minneapolis, Minn.

H. C. Davis, traveling passenger agent, Nashville, Chattanooga and St. Louis Railroad. Headquarters, Chattanooga, Tenn.

H. E. Dengler, freight agent, Lehigh Valley Railroad. Headquarters, Easton, Pa.

D. M. Denison, general freight and general passenger agent, Minneapolis and St. Louis Railroad. Headquarters, Minneapolis, Minn.

W. L. Dulaney, traveling freight agent, Louisville and Nashville Railroad. Headquarters, Houston, Texas.

J. H. Fitch, division freight agent, Louisville and Nashville Railroad. Headquarters, Lexington, Ky.

E. K. Garrison, general agent, freight department, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Seattle, Wash.

J. T. Graffins, general agent traffic department, Minneapolis and St. Louis Railroad. Headquarters, Indianapolis, Ind.

George M. Henry, general passenger agent, Detroit, Toledo and Ironton Railroad. Headquarters, Detroit, Mich.

W. McN. Knapp, traveling freight agent, Tennessee Central R. R. Headquarters, Savannah, Ga.

P. J. Leimbach, commercial freight agent, Missouri Pacific Railroad. Headquarters, Hutchinson, Kansas.

J. P. Linton, traffic assistant to general manager, Florida Railway. Headquarters, Live Oak, Fla.

C. V. Lewis, special representative, freight claim department, Baltimore and Ohio. Headquarters, Baltimore, Md.

H. G. Locke, district passenger agent, Chicago Great Western R. R. Headquarters, Boston, Mass.

J. R. Long, traveling freight and passenger agent, the Wabash Railroad. Headquarters, Philadelphia, Pa.

F. W. Lyons, commercial agent, Lehigh Valley R. R. Headquarters, Hazelton, Pa.

P. H. Mattimow, superintendent of weighing inspection and handling freight, Wabash Railroad. Headquarters, St. Louis, Mo.

Guy H. May, traveling passenger agent, Tennessee Central R. R. Headquarters, Knoxville, Tenn.

Fred Mulberry, traveling freight agent, Louisville and Nashville Railroad. Headquarters, Chicago, Ill.

J. P. Murray, agent, Lehigh Valley Railroad. Headquarters, Ransom, Pa.

L. G. Parsons, general agent, Louisville and Nashville Railroad. Headquarters, Detroit, Mich.

R. P. Reichard, agent, Lehigh Valley Railroad. Headquarters, Tatamy, Pa.

F. L. Salisbury, traveling freight agent, Louisville and Nashville Railroad. Headquarters, Lexington, Ky.

J. A. Scheuerman, assistant general passenger agent, Detroit, Toledo and Ironton Railroad. Headquarters, Detroit, Mich.

M. L. Schultz, commercial agent, Georgia and Florida Railroad and the Detroit, Toledo and Ironton Railroad. Headquarters, Chicago, Ill.

C. L. Smith, general agent, freight department, Chicago Great Western Railroad. Headquarters, Boston, Mass.

J. Spitzenberger, agent, Lehigh Valley Railroad. Headquarters, Manville, N. J.

Glem Strope, agent, Lehigh Valley Railroad. Headquarters, Avoca, Pa.

Frank B. Townsend, traffic manager, Minneapolis and St. Louis R. R. Headquarters, Minneapolis, Minn.

B. M. Waldron, freight claim agent, Baltimore and Ohio Railroad. Headquarters, Baltimore, Md.

G. C. Whitney, commercial agent, Queen and Crescent Route. Headquarters, Greensboro, N. C.

C. P. Wilson, commercial agent, Missouri, Oklahoma and Gulf Railway. Headquarters, Dallas, Texas.

W. O. Wall, general claim agent, Georgia and Florida Railway. Headquarters, Augusta, Ga.

Purchasing.

Leroy Cooley, general storekeeper, Central Railroad of New Jersey. Headquarters, Elizabeth, N. J.

E. O. Griffin, purchasing agent for the receivers, International and Great Northern Railroad. Headquarters, Houston, Texas.

C. B. Williams, purchasing agent, Central of New Jersey. Headquarters, New York City.

Miscellaneous.

C. F. Swanger, chief gardener, Illinois Central Railway.

RESIGNATIONS.

Executive.

Frederick A. Delano, president, Chicago, Indianapolis and Louisville Railroad.

James H. Hustis, president, New York, New Haven & Hartford R. R.

Financial.

H. A. Jones, assistant treasurer, Southern Pacific Company.

Accounting.

E. B. Pierce, auditor, Missouri, Kansas and Texas Railroad.

Engineering and Mechanical.

J. W. Barrie, principal assistant engineer, Florida East Coast Railroad.

Fred M. Baumgardner, master mechanic, Illinois Central Railroad.

J. T. Cherry, supervisor of track, Louisiana and Arkansas Railway.

J. J. Clark, master mechanic, Tennessee Central Railroad.

J. P. Dolan, master mechanic, Missouri and North Arkansas Railroad.

F. L. Guy, division engineer, Atchison, Topeka and Santa Fe Railway.

B. B. Kelliher, chief engineer, Grand Trunk Pacific Railway.

G. W. Robb, superintendent of motive power, Grand Trunk Railway.

H. F. Staley, master mechanic, Carolina, Clinchfield and Ohio Railway.

J. H. Tinker, superintendent of motive power, Chicago and Eastern Illinois Railroad.

Traffic.

Willis Callaway, commercial agent, Atlanta, Birmingham and Atlantic Railway.

R. E. Camp, traveling passenger agent, Atlanta, Birmingham and Atlanta Railroad.

W. A. Dolan, general New England passenger agent, Chicago Great Western Railroad.

C. W. Hay, traveling freight agent, Louisville and Nashville Railroad.

C. H. Latta, traveling freight and passenger agent, the Wabash Railroad.

J. H. Latimer, traveling passenger agent, Nashville, Chattanooga and St. Louis Railroad.

A. E. Lee, general agent, traffic department, Minneapolis and St. Louis Railroad.

S. G. Lutz, traffic manager, Minneapolis and St. Louis R. R.

J. M. Macek, agent, Lehigh Valley Railroad.

R. W. Rigdon, commercial agent, Kansas City, Mexico and Orient Railroad.

F. S. Sleight, general agent, Missouri, Oklahoma and Gulf R. R.

J. N. Snyder, agent, Lehigh Valley Railroad.

J. A. Titlow, freight agent, Lehigh Valley Railroad.

LAND AND INDUSTRIAL.

New York Central's Fruit Packing Demonstration Train.

THE New York Central has recently put into operation a number of fruit packing and marketing demonstration cars which have been sent out by the Agricultural Department of that system in co-operation with the Cornell College of Agriculture. The exhibits installed include different kinds of mechanical graders which are of special interest to growers of large quantities of apples, in view of the importance attached to uniform grading under the provisions of the new Apple Packing Law. Several graders that have been giving satisfaction in different parts of the State will be shown.

Other exhibits show by piles of apples the amount of variation in quality and size, which is permitted under the new law, and to further illustrate this point demonstrations are being made at each stop of the packing of "orchard run" fruit, furnished by local growers.

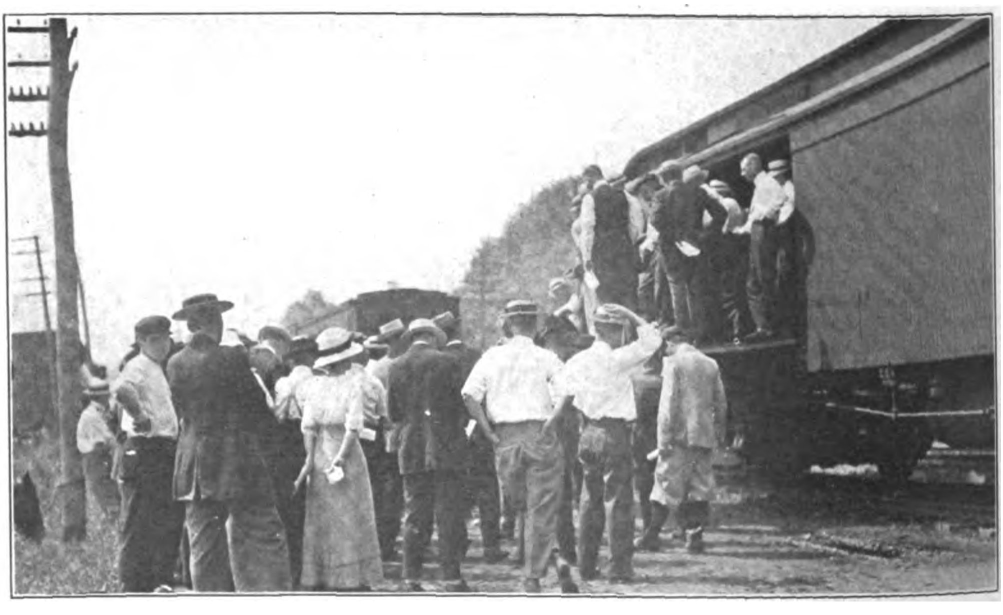
The matter of marketing of fruit is also being touched on in addition to the packing, and lantern slides are used to show the increasing receipts of different varieties of apples in the New York market, the preferences of different markets for different varieties, the prices of fruit by months on the New York Market, and the effect of cancellations of car orders on the available car supply.

Those accommodating the cars are: Prof. C. S. Wilson and H. B. Knapp, of the College of Agriculture, Hon. Marc Cole of the State Department of Agriculture, Mr. C. R. White of Ionia, representing the New York State Fruit Growers' Association, Mr. John Hall of the Western New York Horticultural Society, Mr. R. G. Phillips of the International Apple Shippers' Association and Mr. F. S. Welsh, Agriculturist of the New York Central Railroad, who will have charge of the cars.

BOOK REVIEWS.

Water Traffic and Rates.—By B. Olney Hough, editor of the "American Exporter," published by the La Salle Extension University; price, $3.00.

In the preparation of his book on "Water Traffic and Rates," Mr. Hough has taken a rather different point of view from most writers on this subject, as he deals almost entirely with its practical side. The author has laid particular stress on the matter of handling foreign freight which, at the present time, is of more than usual interest to railway officials and he



NEW YORK CENTRAL'S APPLE PACKING DEMONSTRATION TRAIN SHOWING LECTURER ENGAGED IN EXHIBITING AND DESCRIBING USES OF DIFFERENT MECHANICAL GRADERS.

explains, from a broad experience, the many complexities that arise in connection with the handling of world-wide traffic. He also makes many practical suggestions as to the ways and means of developing export trade. The book also contains a considerable number of photographs and actual forms portraying various phases of the work. Many important and practical facts relative to the conduct of foreign business are brought out, some of which are little known even to the experienced traffic man. Among such points may be mentioned exporting in bond and securing the benefit of the drawback, the latter being a matter of considerable practical importance in many lines of business.

The work is unusually comprehensive as the following chapter heads indicate: Ocean Carriers; Shipping Agreements; Ocean Shipping Routes and Service; Seaports and Terminal Facilities; Handling Export and Import Shipments; Getting Export Trade; Developing Export Trade; Foreign Credits and Collections; Foreign Trade Opportunities; Marine Insurance and Merchant's Marine.

As there appears to be at the present time no other comprehensive text book on this general subject, the work will undoubtedly fill a long felt want.

Link Motions, Valves and Valve Settings.—By Frederick H. Colvin, Assistant Editor, "American Machinist." Published by the Norman W. Henley Publishing Company, New York, Price, 50 cents.

This handy little book for engineers or machinists helps in a practical manner to clear up the mysteries of valve setting and shows the different valve gears in use, how they work, and why. Piston and slide valves of different types are illustrated and explained. It also contains chapters on locomotive link motion, valve movements, setting slide valves, analysis by diagrams, modern practice, slip of block, slide valves, piston valves, setting piston valves, joy Allen valve gear, Walschaert valve gear, Gooch valve gear, Alfree-Hubbell valve gear, etc. The book is fully illustrated and is one which should prove useful to many of the men in the motive power department.

The Validity of Rate Regulations.—By Robert P. Reeder, of the Philadelphia Bar. Published by T. & J. W. Johnson Co. Law Buckram, $5.00.

This book will be welcomed by every serious student of railroad law or of railroad economics. It deals with the principles of constitutional law which are involved in rate regulation, taking up such questions as the contrast between state and federal power over rates, the methods of making and of enforcing regulations, the valuation of property, the constitutional rate of return, discrimination in regulations, and differentials. It carefully enumerates and explains the rules of law which are already firmly established, and it discusses at length many unsettled problems. The subject, which is of the utmost importance to all railroad men, is handled with exceptional ability. The statements in the text are supported by elaborate notes, with an array of citations which it must have required years to gather together; the discussions show a thorough understanding of railroad economics; and the book throughout is written in a style of admirable clearness.

RAILWAY PUBLICATIONS.

The Southern Pacific's Panama-Pacific International Exposition Folder. — For the benefit and guidance of 1915 visitors to the Panama-Pacific International Exposition at San Francisco, the Southern Pacific Company has just issued for general distribution throughout the world a folder, containing a comprehensive map in colors of San Francisco, with carefully compiled facts about that city and her neighbors. Use of this map will not only enable the stranger to find his way about the city but also find quickly all streets, principal buildings, institutions, parks, hospitals, churches, monuments, hotels, clubs, homes of fraternal organizations, street car lines, theatres and newspaper offices, together with the important structures at the exposition. The key to the map is simple enough to make it readily intelligible.

TRADE PUBLICATIONS.

The Young Man and the Electrical Industry.—This is the title of a story written by James H. Collins, the well known magazine writer, which has just been issued by the Westinghouse Electric & Mfg. Company.

The little book deals with the opportunities afforded a young man in this industry and the different lines in which he may direct his activities as exemplified by the works of the Westinghouse Electric Company.

The company announces that it will supply a copy to anyone interested in the development of young men.

The Growth of the Galena Signal Oil Company.

A STATEMENT recently issued by the Galena Signal Oil Company to its stockholders, constitutes a most remarkable document, not only on account of its extreme frankness, but because of the remarkable growth in the activities of this Company, which it reports.

The most striking portion of the statment is that which gives the principal customers of the company.

"In July, 1869, the Union Pacific first used Galena Oil for its equipment. That railway is still our customer, and also the following railroads have been using our oils for forty or forty-five years:

Union Pacific
Delaware & Hudson
Northern Pacific
St. Paul
C., B. & Q.
C. R. I. & Pacific
Chicago & Alton
Chicago & N. W.
Lake Shore & Mich. South.
Big Four

"To-day we are supplying all the trans-continental railways in the United States and Canada with Galena oils. We supply 98 per cent of all the railroads in the United States and Canada.

"In this connection it might be interesting to note that the largest percentage of Galena oil customers have been users for from twenty to forty years, and that scarcely a railroad using our oil has not been on the company's books under contract for the last ten to twenty years.

"In addition it might be mentioned that Galena numbers as its customers the Interborough Rapid Transit Company of New York City and the Manhattan Elevated since these two companies were formed; also all the companies operating street cars in New York City and all the lines of the Brooklyn Rapid Transit Co. The street car department commenced supplying oils to trolley lines and street railroads in 1890, and is now supplying lubricating oils for about 75 per cent of the total street car mileage in this country."

To quote further: "Your company manufactures about 130 different kinds of oils for special purposes for railroads, among which the following were the original oils manufactured by the two companies combined into the Galena Signal Oil, and since their introduction have remained standard for the purposes for which they were intended: Perfection Valve Oil, Galena Engine Oil, Perfection Signal Oil, Galena Coach Oil, Galena Car Oil. When your company began the output was 12,000 barrels. In 1878 it was 15,000 barrels, and the business has grown until in 1913 the output was 800,000 barrels."

The history of the company, from its inception in 1869, when General Charles Miller and his partner, John Coon, started an oil refinery at Franklin, Pa., is traced through the various stages up to the present company, Galena Signal Oil Co., which was formed in 1900 as a result of the consolidation with the Signal Oil Co.

The latter company started the manufacture of lubricants long before the Standard Oil Co., and in tracing the relation of the Galena to the old Standard Oil Co., of New Jersey, it is explained how General Miller's partners sold out their stock, but left the management of the business entirely in the hands of General Miller.

It is denied that the Galena was ever, in the strictest sense, a subsidiary of the Standard Oil Co., and to prove this the court records in the dissolution proceedings are cited:

"In 1879 the Standard Oil Co., of New Jersey purchased the interest of Mr. John Coon, Mr. H. B. Plummer and Mr. Richard H. Austin, the three partners of General Miller, and became the owners of the majority of the Galena stock and 37½ per cent of the Signal Oil Co. However, the management and direction of the business was left entirely in the hands of General Miller. At the time of dissolution of the Standard Oil Co., of New Jersey it owned 70 per cent of the common and 84.37 per cent of the preferred stock of the Galena. Consequently, while the Standard Oil was the largest stockholder of the Galena at the time of dissolution, the Galena existed long before the Standard Oil ever manufactured any oils, and therefore, in a true sense it never was and is not now a subsidiary of the Standard Oil, but simply a company in which the Standard was interested. When the investigation was made by the Government upon the allegation that the Galena had obtained its large business through the efforts or under the fostering care of the Standard by giving freight to the railroads. This was absolutely disproved, and all other allegations which the Government made were disproved in toto."

In summarizing the financial history of the company, the statement says:

"A review of the financial aspect will interest you. Stockholders have never failed to receive a dividend since the company was organized in 1869. The capital after the dissolution of the Standard Oil consisted of $2,000,000 eight per cent preferred stock and $8,000,000 common, the latter paying sixteen per cent per annum in dividends. On May 15, 1913, the common stock was increased to $12,000,000 and a stock dividend of 50 per cent was declared out of surplus. Subsequently the common dividend rate was made twelve per cent per annum and an extra dividend of one per cent was paid June 30, 1913. The present rate is twelve per cent, payable three per cent quarterly out of earnings. The balance sheet of your company as of December 31, 1913, compared with the corresponding figures for 1912, follows:

ASSETS.

	1913	1912
Plants, contracts and trade marks	$9,456,592	$9,111,583
Merchandise	1,762,118	1,344,707
Securities, accts., notes receivable	5,348.637	4,926,518
Cash	544,154	1,292,408
Total	$17,111,501	$16,675,276

LIABILITIES.

Preferred stock	$2,000,000	$2,000,000
Common stock	12,000,000	8,000,000
Accounts payable	2,185,486	1,875,850
Profit and loss surplus	*926,015	4,799,426
Total	$17,111,501	$16,675,276

"*The profit and loss surplus of your company was changed to the extent of $4,000,000 by the distribution of the 50 per cent common stock dividend referred to above.

"Cash on hand, which was $544,154 on December 31, 1913, decreased approximately $750,000 from the amount of the corresponding date of 1912 because your company has seen fit to invest a portion of its surplus in high-grade securities. At present cash on hand is $1,600,000.

"Your company has no bonded debt, no notes and no bills outstanding; in fact, since 1875 the Galena has not borrowed money nor discounted any paper."

Map of New York City's Rail Terminals.—The Merchants' Association of New York has just published a useful map of the rail terminal facilities of New York City, prepared by its Industrial Bureau. It shows the entire harbor including the Lower Bay, as well as a large part of New Jersey, the Bronx and Staten Island. The map shows only the freight facilities and indicates classification yards, track and warehouse delivery points, warehouses which are directly connected with railroads and railroad piers.

This map brings out forcibly the rail transportation facilities of the City. Along the New Jersey side of the Hudson River and the Upper Bay are to be found the terminals of almost all the railroads entering New York. Opposite these, in Manhattan, are the railroad piers which are terminals for the New Jersey roads. In addition there is the New York Central, which has its most southerly terminal at St. John's Park.

The characteristic development of Brooklyn is the growth of joint terminals. From the Bush Terminal in South Brooklyn northward to Newtown Creek, there are a number of these joint terminals where the shipper can unload his goods from any one of the railroads entering Greater New York.

The manufacturer who locates his plant in New York City within a reasonable distance of these various railroad terminals, or near any one of the joint terminals, is able to connect directly or indirectly with every railroad in the United States.

Statement for April, 1914, of the ownership, management, etc., of the "Railway World," published monthly at Philadelphia, Pa., required by the Act of August 24, 1913.

Editor	Edward G. Ward,	Philadelphia, Pa.
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(Signed) E. G. WARD,
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Sworn to and subscribed before me this 27th day of March, 1914.

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(My commission expires February 21, 1915.)

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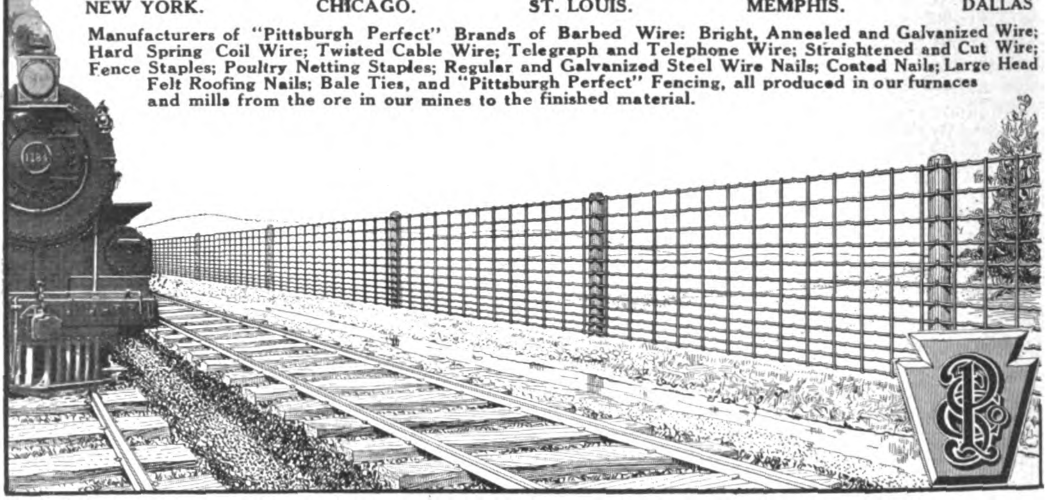

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Railway World

VOL. LVIII. OCTOBER, 1914 No. 10

Important Developments in the Transportation Field

THE FREIGHT RATE CASE

The Interstate Commerce Commission is again engaged in hearing the Eastern railways' plea for an increase of five per cent in their freight rates.

As in the previous advance rate case decided a few months ago, President Willard, of the Baltimore and Ohio Railroad, opened the proceedings by stating that "the needs of the carriers are pressing and immediate" and that "the actual situation has become extremely critical."

Mr. Willard is chairman of the Committee of Railroad Presidents having in charge the presentation of the railroad case. His statement summarizes the general facts upon the basis of which the railroads maintain that the Commission should now allow the general increase of five per cent in freight rates.

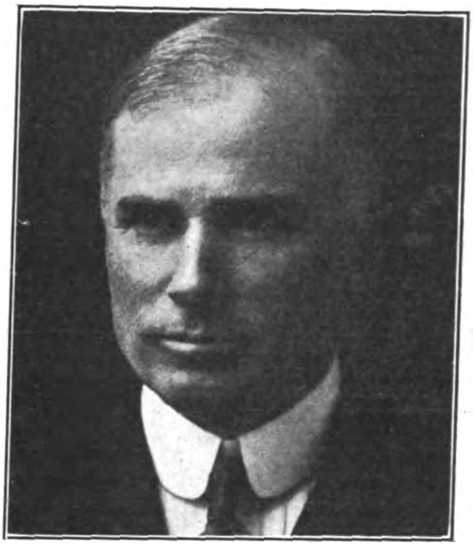
Mr. Willard called attention to the decision of the Commission in the former case, wherein was stated that "the net operating income of the railroads in Official Classification territory * * * * is smaller than is demanded in the interest of both the general public and the railroads," and to the fact that the railroads had already taken action to secure additional revenues through various advances and changes of practice, but, added Mr. Willard, "the measures of relief proposed by the Commission will not in our opinion adequately meet the existing situation."

Among other things Mr. Willard said:

The annual statements of all the railroads involved in this proceeding combined, for the fiscal year ending June 30, 1914, show roundly that the total operating revenues during that year were approximately $48,000,000 less than during the previous year, while the operating expenses during the same period were approximately $22,000,000 greater.

The net operating income of these companies for the same period amounted to $260,000,000, or approximately $76,000,000 less than was earned during the previous year, and equal to but 3.98 per cent upon the property investment, a lower return than was shown at any time in fifteen years.

The income, applicable to interest, dividends and surplus, during the fiscal year just closed, was $265,700,000, or 4.06 per cent upon the total capital obligations, this return also being lower than any in fifteen years.



DANIEL WILLARD.

President, Baltimore and Ohio Railroad, who again opened the advance rate case for Eastern carriers.

A war such as that now raging causes great and immediate disturbance to industry, commerce and finance. It causes contraction of credit and great restriction, if not the actual stoppage of international trade as well as serious disturbance to domestic commerce, and, as we have seen, it has thrown the security markets of the world, first into panic and then into suspension of operations.

These have, in fact, been the immediate, direct and clearly apparent consequences of the war which began less than three months ago; but the ultimate and more lasting consequences are almost as plainly to be seen and will certainly follow, if they do not accompany, the conditions mentioned.

These are enormous destruction of wealth, with great diversion of labor and capital to unproductive employment, thus causing a check to the world's accumulation of new capital, and a serious and prolonged rise in the rate of interest. The effect of such higher interest rates will continue long after the present emergency has passed, because they will be reflected in the basis upon which the new securities will be issued from time to time as required, for refunding and other purposes.

In so far as the war and its consequences tend, as I have just shown, to change the conditions surrounding the enlistment of new capital, they tend to change the fundamental relation between railroad and shipper, for the cost of capital is one of the most important elements of the cost of transportation.

It is known that the railroads of the United States have over $520,000,000 of outstanding obligations which will mature and must be met within the next twelve months alone. It was shown in the original record in this case that the railroads in Official Classification territory only had spent approximately $200,000,000 per annum upon their properties for improvements and extensions during the last ten-year period, and it will be necessary to continue such expenditures if the roads are to maintain their standard of service and provide for the growing needs of the future.

Further, as nearly as can be ascertained, there are more than $3,000,000,000 par value of American railroad securities held abroad as investments. The demands for cash in Europe, growing out of the present situation, will doubtless result in large selling of such securities when the markets or stock exchanges are again opened, and the possible effect of such selling upon railroad credit and related subjects is causing much concern.

With all this in mind it will readily be seen that the available supply of and probable demand for new capital, as well as the interest rates thereon, are matters of great importance, not only to the railroads, but also to those who depend upon them for transportation.

The specific differences in the financial situation of the thirty-eight Eastern carriers now as compared to one year ago, when the five per cent rate advance was first requested, were presented to the Commission by Mr. George M. Shriver, vice-president of the Baltimore and Ohio Railroad. Mr. Shriver is chairman of a committee of accounting officers appointed to compile data for the railroads as a whole. Mr. Shriver's figures covered the period to June 30, 1914.

"A striking feature of the 1914 returns," said Mr. Shriver, "is the complete disappearance of surplus or margin."

The figures presented showed that the railroads in this territory paid in 1914 average dividends of 4.58 per cent, but that they fell short by $8,200,000 of earning that dividend—itself the lowest rate of dividend paid in ten years. The year 1914 was the first year in fifteen years in which these railroads earned no surplus over the dividends paid.

For the three systems generally considered prosperous, viz., the Pennsylvania, the New York Central, and the Baltimore and Ohio, the surplus or margin after an average dividend of 5.53 per cent, was only $461,235. In 1913 it was $47,083,000 and had averaged $38,733,000 for fifteen years.

In the previous case special attention was called to the fact that whereas all the roads concerned in this proceeding had in the three years ended June 30, 1913, invested $660,000,000 in their properties, the net operating income in 1913 was $16,300,000 less than for 1910, before the $660,000,000 had been spent.

BUSINESS
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Mr. Shriver presented figures showing that during the past year these same roads had invested $249,000,000 additional in their properties, and yet their net earnings were $70,500,000 less than for 1913. In other words, in four years $909,000,000 had been invested in these properties, and yet on June 30, 1914, these companies were $87,500,000 worse off in net operating income than they were before the $909,000,000 had been spent.

Operating revenue in 1914 was $1,375,000,000, less by $48,000,000 than in 1913, although operating expenses (notwithstanding the smaller amount of business handled) were $22,000,000 more than in the previous year.

While the business handled in 1914 was, excepting 1913, the largest in fifteen years, the net operating income was the smallest shown in ten years.

Taxes increased $2,900,000 in 1914. These railroads paid $22,000,000 in taxes in 1900; they paid $57,000,000 in 1914—an increase of 159 per cent.

The taxes paid by the three larger systems were $33,400,000 in 1914, an increase of $2,180,000 over 1913. These same companies paid but $12,200,000 in 1900—an increase for the period of 173 per cent.

For the Pennsylvania, the New York Central, and the Baltimore and Ohio, net operating income in 1914 was $41,476,000 less than in 1913, and the lowest in ten years.

Dividends paid by these three systems were smallest in five years and at the lowest average rate for ten years.

In 1914, for the three systems, the sum available for interest, dividends and surplus amounted to but 4.54 per cent on total capital obligations, a rate much the lowest of any shown in the preceding fourteen years. Previous to 1914 the ratio did not fall below 5.67 per cent.

On the second day of the hearing Mr. Charles A. Conant, of New York, author of many authoritative works on finance, testified before the Commission as an expert concerning the financial conditions as affected by the European war and particularly as related to American railroad securities. Mr. Conant said in part:

(1) The cost of the war, if it lasts approximately a year, will not be materially less than $15,000,000,000.

(2) The demand for capital for purely war purposes, and for the settlements which succeed the war, will be so great as to absorb an amount equal to the entire savings for investment made in all civilized countries for a period of several years.

(3) The effect of this abnormal demand for capital, which is being consumed without economic profit, will be to raise the rate of interest on investment securities higher than it has been for many years.

(4) The fact that such enormous sums to pay the costs of the war are sought almost exclusively by means of Government loans will make it impossible to obtain capital for other purposes, except at a rate of interest considerably higher than that paid by governments.

(5) The financial disturbances which will occur during the process of distribution of these Government loans to investors, extending over several years, will involve the sale on the American market of railway and industrial securities now outstanding to an amount which will in itself absorb so much of the new capital available in the United States, that it will be extremely difficult to obtain any for new enterprises.

(6) If, therefore, American railways and industrial enterprises are to obtain any new capital whatever, during the next few years, it will be necessary to make issues of securities very attractive, not only in respect to the rate of interest, but in respect to the evidence that the interest and dividend payments are absolutely secured by adequate earnings.

Mr. Conant quoted authorities indicating that the world's new capital normally available for investment amounts to about $4,000,000,000 per year. He then concludes:

If the cost of the war for one year has to be paid out of the amount of annual savings indicated by these figures, then every dollar of new capital for approximately four years will be absorbed in Government loans, and there will not be a penny available in any financial market for building a railway spur, putting up a new station or terminal out of capital account, adding a bobbin to the equipment of woolen and cotton mills, or making a single public improvement in the city of New York or any other municipality except out of current revenue.

What part the railways will be able to play in wresting a portion of the world's savings from the outstretched hands of the powers which have been blowing away thousands of millions in powder and ball becomes an interesting consideration. They must come into the open market and bid against the greatest states in the world for some scanty portion of the supply of investment capital.

The rise of the return on capital to a new rate and the corresponding fall of prices of securities to a lower level are facts which are apparently inevitable. It should be possible, however, to so distribute the shock of the descent that quotations on the exchanges should oscillate around this new center of gravity instead of plunging violently below it even temporarily.

Leaving aside the question of averting panic, the most important question involved in the return of American securities held abroad is the manner in which it will diminish the fund of capital which is normally available for new investments. In this direction the effect of the European war loans will be acutely felt in this country, even if not a dollar of American money appears as a bidder for the new loans.

It has been recently calculated by Sir George Paish, the economic adviser of the British Government, that the total amount of foreign capital invested in the United States is $6,000,000,000. He also estimates that foreign capital, chiefly British, is invested in Canada to the amount of $3,500,000,000, and in other American countries, including all Latin America, to about $10,000,000,000.

It is these enormous sums in foreign holdings which represent the most serious menace to the American market and to the possibilities of our future financial development. This money has been advanced to us from time to time over a long period, because there was not a sufficient fund in America to meet the requirements of our development.

The newer states of the West could never have been equipped with railways, banks, grain elevators, barns and homes, if foreign capital had not been poured into them in hundreds of millions after our Civil War. What will be involved, in effect, if European investors undertake to market a large part of their holdings of American securities in New York, will be the conversion of this gigantic time loan, payable only over long terms of years into a call loan payable as rapidly as the securities can be sold on the New York Stock Exchange. It would hardly be within the range of the capacity of the banking system of the country to absorb the entire amount of $6,000,000,000, estimated by Sir George Paish to represent foreign investments in the United States.

The amount in such securities which is returned to the American market will influence directly the amount of investment capital remaining in the United States available for other purposes. It is at this point that the problem comes directly home to American railway managers and their bankers.

If the country is subjected to a severe strain in order to take back from European holders an amount of securities representing the fund usually available for investment for one year or for several years, there will be practically no surplus left for investment in new railway issues.

Here again, a question of vital importance will be how far the issues can be made attractive, not only in the rate of interest paid, but in the surplus of earnings above the operating expenses and existing fixed charges of the issuing company, which will give a complete guaranty of security to the new investments.

For a number of weeks past the Commission and other government officials at Washington have been receiving appeals from all sections of the country for a prompt and decisive action with reference to railway earnings. The Commission's delay in this matter has been widely deplored and even severely criticised, it being the general belief that the peculiar and urgent necessities of the case, made such delay extremely unfortunate.

Banking interests and investors have become thoroughly aroused, and are expected to take an active part in the hearing.

This is indicated by the following letter addressed to the members of the Investment Bankers' Association by its president, George B. Caldwell:

> President Wilson, in a letter recently published, has called attention to the fact that it is of paramount importance in the present crisis to maintain the credit of the railroad industry in the United States.
>
> The clientele of the members of the Investment Bankers' Association embraces almost the entire investing public of the country. A very large proportion of this clientele owns railroad securities. It is therefore of particular importance to the membership of the Association that the value of railroad securities should remain as far as possible unimpaired.
>
> For several years a situation has been developing in the United States which vitally affects every owner of a railroad bond or share. We refer to the steadily decreasing margin of net earnings of the railroads, which has already resulted in placing corporations with over $500,000,000 of outstanding securities in the hands of receivers.
>
> For the purpose of placing before the proper tribunal the broad facts as they have developed, and are developing, your committee has asked that you write them a letter which may be considered a composite representation of the opinions of your own clients to whom you have in times past sold securities (especially railroad securities) and which will state their impressions as to the safety of their investments—say ten years ago—and at the present time. If such statements show an increasing lack of confidence in the intrinsic safety of these securities, has this lack of confidence been brought about through the various increases in labor cost enforced by arbitrations sanctioned by the government through the reduction in rates enforced by state legislatures and commissions acting independently and by the Interstate Commerce Commission? Are these the principal causes? If not, what others are stated?
>
> Your committee believes that statements of this character, representing the opinion of hundreds of thousands of individuals in the country who have in times past furnished money for extensions and improvements of the roads and from whom the money must come to provide for future extensions and improvements, will be of great value in considering the merits of the situation.
>
> The following questions are submitted with a view of outlining some phases of the situation which the committee believes should be covered:
>
> 1. During the last ten years have you noticed any change in the requirements of your clients in the matter of preferences for municipal, industrial or public utility bonds or stocks where previously they have purchased steam railroad bonds? Give their reasons.
>
> 2. Has there been a growing reluctance on the part of your clients to the purchase of the newer, and therefore junior, securities of steam railroads and a growing preference for underlying issues? Give their reasons.
>
> 3. What expressions of opinion have you had from your clients in regard to the necessity of an increase in the rates of well-managed, conservatively capitalized railroads, as being necessary for the protection of their investments? Give their reasons.
>
> 4. Has there been, to any great extent, a disposition to exchange steam railroad securities for other classes of corporate issues, for any other reason than possibly a larger return on the investment?
>
> 5. What effect do you believe the European war will have on the attitude of your clients toward the purchase of railroad bonds?
>
> 6. Do you anticipate that unless there is an increase of rates, or some other method devised, which will stem the tide of declining earnings of the steam railroads, it will be possible to place with your clients the large amounts of securities which must necessarily be floated to cover maturing obligations, amounting to over $500,000,000 prior to January 1, 1916, and should be floated to provide added facilities for the increased business which will be necessary if this country continues to grow in wealth and population?

Not only are railway stocks and bonds held by hundreds of thousands of individual citizens, but banks, insurance companies and other large financial concerns are heavily involved, and the outlook is viewed with liveliest concern. Daily it is becoming more apparent that the whole financial situation has been greatly aggravated by the fact that a very large part of American securities is discredited by the disastrous situation which has been brought upon the railroads. It is now over two months since the closing of our stock exchanges and the menace of a great mass of foreign sales still provides the barrier against their reopening. In this particular, the railway wields a vital influence, for if the carriers were earning ample surpluses, insuring permanent dividends and easy payment of fixed charges, the whole situation would be changed. Our securities would then be the most attracive in the world, because they would be the issues of highly profitable companies located in the only great country in the world at peace. Such a situation would advance prices materially for these securities and would reduce by hundreds, and probably thousands, of millions the amounts which would press for sale on the Stock Exchange. Every present holder abroad who was not forced to sell would be eager to hold such investments, liable to advance. These European holders are careful students of investment conditions. They would at once realize that our securities on this new basis would be the last things to part with, as they would be far safer in the present situation than money in hand over there could possibly be, or than the securities of any other country.

To produce such a situation would appear vital to the reopening of the Exchange, and the reopening is really necessary to bring about normal industrial conditions, activity, and prosperity.

To quote from a statement issued by the New York banking house of J. S. Bache and Company, on October 7th:

> How then can the situation be produced? The power is absolutely in the hands of the Interstate Commerce Commission They have restricted the earning powers of the railroads, especially since 1910, until to-day the roads, largely by reason of inadequate charges, are many of them, in the hands of receivers, others are facing bankruptcy, and only a few of them are making a successful showing.
>
> As a business proposition the railroads are not making money, and have not been for a long time.
>
> They have been compelled to default within the last few months on obligations equal to half of the national debt.
>
> Net operating income of all the railroads declined in one year to June 30, 1914, 120 millions, and no relief is in sight.
>
> There is only one way to save the situation, and this is by a liberal increase in rates.
>
> This can be done promptly and will be amply effectual at once if the increase is large enough.
>
> This situation is realized by Congress and by the President, and the latter has recently, in a strong letter, called the attention of the country to the facts.
>
> To this power of public opinion the Interstate Commerce Commission has responded by agreeing to reopen the Eastern rate case, the decision on which, rendered after long months of delay and when the shock of war was upon the whole world, left the roads in desperate condition, as far as any adequate benefit was promptly obtainable. But the Commission has, disappointingly, delayed the new hearing a whole month, until October 19th.
>
> As a war measure for the relief of the entire country, it should have received immediate attention.
>
> Every other agency of the government and every business interest in the country is hurrying all expedients necessary to meet the war emergency. Is it unreasonable to ask the Interstate Commerce Commission to do what everybody else in the country is doing, from the President down?
>
> In considering this question of the railroads, the public should not let prejudice against officers, directors and managers cloud their views. These officials are merely a part of the machinery of railroads. The real parties affected are the thousands and thousands of security holders all over the country and representing all classes of people and institutions.
>
> The prosperity of every business man in the United States depends upon prompt action. It should be the mission of all business men, security holders and chambers of commerce to impress upon the Commission their views of the importance of immediate and liberal action.
>
> The business of the country cannot proceed normally and successfully until the Stock Exchange is open.
>
> How can the Exchange open successfully until our securities are made especially attractive through ample earnings?
>
> The Interstate Commerce Commission can bring this about by a turn of the hand.
>
> It is the business of business people to let the Commission know what they want and to let them know it promptly and in an emphatic way.

Undoubtedly the financial interests of the country will be strongly represented at the hearing now in progress. This is already indicated by the fact that the Investment Bankers' Association has appointed a committee which the Commission has signified its willingness to hear. This committee, which will come to Washington fully prepared to show the Commission why immediate relief should be granted to the railroads, is composed of the following men:

> George B. Caldwell, chairman; John E. Blunt, Jr., Merchants' Loan and Trust Co., Chicago; Frederick Strauss, J. and W. Seligman and Company, New York; Moritz Rosenthal, Ladenburg, Thalmann and Company, New York; S. L. Fuller, Kissell, Kinnicutt and Company, New York; A. G. Hoyt, N. W. Halsey and Company, New York; Lawrence Chamberlain, Kountze Brothers, New York; Warren S. Hayden, Hayden, Miller and Company, Cleveland; Stedman Butterick, Estabrook and Company, Boston; R. B. Young, E. H. Rallins and Sons, Boston; Howard Graham, Graham and Company, Philadelphia; R. Lancaster Williams, Middendorf, Williams and Company, Baltimore; J. R. Edwards, Cincinnati; W. R. Compton, William R. Compton, Comany, St. Louis; R. T. Field, Field, Richards and Company, Cincinnati; B. B. Veech, United States Trust Company, Louisville; Lynn H. Dinkins, Interstate Trust and Banking Company, New Orleans; W. G. Lackey, Mississippi Valley Trust Co., St. Louis; J. Herndon Smith, Smith, Moore and Company, St. Louis; J. A. Prescott, John A. Prescott and Company, Kansas City; Gardner P. Stickney, Wisconsin Trust Company, Milwaukee, and Eugene M. Stevens, Stevens, Chapman and Company, Minneapolis.

As an indication of how deeply the present railway situation is interesting the general public, the following plank in the platform of the Maryland Republicans adopted September 28th, is of interest:

> To starve the railroads is to starve the nation and we believe that the deplorable condition of the railroads of the country calls for relief through the proper governmental agencies, fully without stint, freely without delay, for the benefit of the railroads as public carriers and for their hundreds of thousands of employes.

Attention has been called in past issues to the more liberal attitude of foreign governments towards their railways than apparently exists in this country. This is not only true with regard to private owned transportation systems but even with regard to those which are owned by the state. Rates have been increased without half the trouble and with far greater success than characterizes similar efforts in this country. Apparently the United States stands practically alone at the present time in its evident determination to strangle one of its greatest and most efficient industries.

How the attitude of our Commission is viewed abroad is strikingly illustrated by a recent German review of the advance rate decision published in *Zeitung des Vereins Deutscher Eisenbahnverwaltungen,* the official journal of the German Railway Association. In view of the fact that Prussia is the land of government ownership and practically military organization of railways, this statement has peculiar force as applied to the restrictive tendencies of our present regulative methods. The statement says in part:

> Thorough treatment of the results of actual inquiries is conspicuous for its absence. For months, witness after witness and expert after expert were examined. From them a mass of facts for and against the case of the railways must have been brought out. In the decision there is as good as nothing covering all this. The few statistics on capital, traffic, receipts and expenses could have been secured easily from figures already on file with the Commission or from reports which could have been made in the shortest time. There was no necessity of spending many months.
>
> Since there is a lack of concrete foundation the arguments of the Commission make no lasting, convincing impression. One would think he was reading a not too weighty scientific treatise, instead of the decision of so high, and, because of its power, so very respected a body.
>
> The occasion surely was important enough for exceptional handling. * * * * Yet there is lacking adequate grounds * * * * for the separation of the territory into one part where the increase was granted and another where it was refused. The few figures on average rates charged on individual roads in the affected areas are insufficient as a basis for a discrimination so seriously disturbing and cutting so deeply into the industrial structure.
>
> The impression is given, involuntarily, that the Commission had been driven most unwillingly to a decision favoring the increase; and, to please both sides, railroads and shippers, had found no other way out than this, so to speak, local division of spoils.
>
> Concerning the gratuitous advice given as to how the railways may find relief, there is not much to be said beyond what railroad men have said already. But through the thoroughly impracticable proposal for an increase in passenger rates the Commission has opened itself very seriously to attack. * * * * The objection can be made with justice that great difficulties stand in the way of raising passenger tariffs, wholly aside from the fact that in a large number of states passenger rates for intrastate traffic are fixed by law; and that from a technical as well as an economic standpoint it is inadvisable to raise interstate fares higher than state fares.
>
> Throughout there is a certain irritable tone which in a more or less judicial decision is not in place. Repeated introduction of the misdeeds of individual enterprises and the vehement rejection of suggestions made to it (from outsiders) were better left out.
>
> The review closes by contrasting the experience of German roads in a similar petition 40 years ago, when they were granted an increase of 20 per cent to offset higher costs and wages.

THE ENORMOUS WORK INVOLVED IN TARIFF RECONSTRUCTION

There is an element of grim humor in the news from Washington that the Interstate Commerce Commission is likely to issue a statement to the public practically accusing railroad executives of being derelict in their duty in not having made greater progress in their readjustments of freight tariffs as suggested in the Commission's decision in the five per cent rate advance case. As a matter of fact, never have the traffic departments of the Eastern roads been under such a terrific strain or worked with such desperation, as they have within recent weeks in their effort to rearrange their tariffs so as to procure what benefit there appeared to be in the very unsatisfactory and inadequate rate decision. Many of the suggestions have been found extremely difficult to follow in view of their impracticability and lack of real understanding of present rate structures and an effort to work them out has led to snarls and tangles which it has appeared almost impossible to unravel.

In spite of these difficulties the rate experts have been working heroically to accomplish results and any apparent lack of progress is due to the difficult nature of the readjustments, rather than to any lack of effort on the part of the traffic departments. The work has been pushed night and day and in every possible way. This the Commission should be fully cognizant of and if it is really seriously considering issuing a statement to the public criticising the carriers' attitude in this particular it is grossly ignorant of the true state of affairs. Instead of being derelict in their duty, the railroads have been doing everything in their power to prepare the new freight tariffs called for under the decision and furthermore, it would appear incomprehensible that the Commission is not fully aware of this fact.

EXTREME MEASURES TO REDUCE EXPENSES

The plight of the railroads has led to the adoption of extreme measures in an effort to reduce operating expenses. Sacrifices have been made which, in other businesses, would have led to a mighty protest, particularly in view of the fact that these sacrifices are the result of no fault on the part of those who have been compelled to make them, but are due, to a large measure at least, to the intolerable interference in railway affairs by those in whom regulative authority has been vested but who appear to have no real appreciation of the necessity of offsetting the effect of their enormously expensive regulations, by some increase in railway revenues. We are now witnessing a very tardy recognition of this fact which, it is to be hoped, will yet save the general situation. Of course it is admitted that there is, at the present time, a general business depression which is unfavorably affecting the carriers' revenues. Likewise the influence of the European war is not helpful, but nevertheless, it is generally recognized that, had regulative authorities assumed a fairer and more liberal attitude towards the carriers, railway business in general would not have suffered so severely.

Many roads have, therefore, been compelled to resort to extreme measures. How far, in some instances, these forced economies have reached, is indicated by the following announcement made on October 11, by the Southern Railway:

> In view of the curtailment of service made necessary by the current depression of business and the consequent reduction of the opportunity of many hundreds of employes to earn the wages to which they have been accustomed, President Fairfax Harrison of Southern Railway Company, has deemed that it is only fair that the officers of the company should also share the sacrifice.
>
> He has accordingly reduced his own salary twenty per cent, and has asked all the other officers receiving salaries in excess of twenty-five hundred dollars per annum to accept temporary reductions on a descending scale, proportioned to the amount of their salaries, so as to distribute the personal sacrifice equitably. Under the plan adopted the pay of those receiving salaries of as much as twenty-seven hundred dollars will be reduced two per cent. The officers affected have all accepted the situation with loyal appreciation of the necessity of a spirit of mutual sacrifice. While the actual saving to the company on this account is relatively small, the principle of common interest of all those who draw their livelihood from Southern Railway Company has been the controlling motive.
>
> Following this action, the board of directors has reduced the dividend of the preferred stockholders, many of whom are women dependent upon this income, from five to four and one half per cent, although it was fully earned before the present tendency of business was apparent, and has declared it payable not in cash but in deferred scrip so that all interests in the property may participate in the retrenchment.

THE PRESS AND THE RAILROADS

One of the hopeful signs of the times, so far as the railways are concerned, is the evident desire of the press of the country to give the carriers a square deal. If, as has been often stated, the daily papers reflect public sentiment, then a great change has been brought about, for, whereas, a few years ago newspaper support of the railways was so uncommon as to prove almost the exception to the rule, to-day the situation is practically reversed and the carriers are receiving a vigorous editorial support which should soon be reflected by a more liberal and tolerant attitude on the part of public regulators.

An example of this support is illustrated in the recent action of the Missouri Press Association which, in annual convention at St. Louis, adopted a resolution stating that the railroads should be permitted to receive sufficient remuneration to enable them to render high class service and inviting the co-operation of legislative bodies and thinking citizens to accomplish these ends. Membership in this Association includes the editors and publishers of practically all the daily and weekly newspapers in Missouri, embracing what is said to be the largest organization of its kind in the country, and therefore, believed to be representative of public opinion generally. The text of the resolution is as follows:

> WHEREAS, The railroads of the United States are the most vital forces for agricultural, commercial and industrial progress in the nation, as well as the largest employers of labor and the heaviest purchasers of steel, lumber and other material; and,
>
> WHEREAS, The European war has closed to them indefinitely the money markets of England, Germany, France, Austria, Belgium and Holland, thus compelling them from this time forward to finance their needs and requirements within the United States, and bringing them face to face with the gravest crisis in their history; and,
>
> WHEREAS, We believe it essential for the future agricultural, commercial and industrial welfare of the nation that the railroads be permitted to receive sufficient remuneration to enable them to render high-class service, to make such improvements and betterments from time to time as

FAIRFAX HARRISON.

President, Southern Railway, who believes there is a distinct improvement in public sentiment towards the carriers.

the needs of the different communities may require, and to re-establish American railroad securities as a highly respected and sound investment; therefore, be it

Resolved, That the Missouri Press Association, realizing the great and vital part which the railroads have played in the development of our great commonwealth in the past, and the further fact that we are still in need of many new lines and extensions before we shall be able to realize the fullest possibilities of the matchless resources of our state, invites the co-operation of all thinking citizens and our lawmaking bodies to the accomplishment of the above ends. In this connection we heartily indorse the non-partisan proposal of Congress to surround the issuance of railroad securities with such safeguards as will henceforth protect the public and the purchaser of railroad securities alike.

THE BUSINESS MAN'S INTEREST IN A LIBERAL RAILWAY POLICY

Recent months have shown a growing appreciation on the part of business men that general prosperity is impossible without railway prosperity. The transportation industry is now so vast that any restriction in its legitimate progress has its effect upon all industrial activities. This has been recognized by railway officials and economists for a number of years but only lately has the business man been able to fully understand the interrelation.

The result is that the general public is becoming more active in its support of a liberal policy of railway regulation and the pressure on public regulators is becoming daily more severe. How great this change in public sentiment has been, is strikingly indicated in the following circular letter recently sent to the district managers' office by a large manufacturing company:

Dear Sir:—The return of peace in Europe ought to mean business revival if it does not come before that event. Many factors may determine how prompt and how full that will be. In respect to one leading factor we can help to a very large extent and that factor is the railways. They need more income and the policy of this company has ever been in favor of permitting them to obtain it. The Interstate Commerce Commission in July concurred in this, and the war has led President Wilson to make an appeal on their behalf.

The actual realization of higher railway rates will strengthen the investor's confidence; increase the buying power of the railways themselves; enable customers to finance their operations, and inevitably bring orders to our company.

The Commission instructed the roads to find new income in passenger rates and they have sanctioned an advance in mileage rates which has gone into effect.

Notwithstanding that that increase will materially increase our expenses, we believe that the advance is necessary and expedient. This is the official attitude of our company and you are hereby advised of it for your information and guidance and those of our employes under your direction.

Other interstate mileage cases are pending and state legislatures and commissions must co-operate if the advance is to be made fully effective. Certain commercial travelers' organizations have protested against any increase in mileage rates, which we believe is a mistake from an economic standpoint, and that the influence of such commercial organizations should be in favor of the advance.

Our representatives should therefore not take any position antagonistic to this move. They should, on the contrary, reflect the attitude of the company in their contact with outsiders and do everything that they reasonably can to influence opinion in favor of aiding the railways; for we appreciate how essential to our business and business in general is their prosperity.

Yours truly,

——— ———,

Vice-President.

This growing appreciation on the part of the public of the necessity for a fair and proper consideration of the problems which are constantly confronting the carriers, is well set forth in the annual report of Fairfax Harrison, president of the Southern Railway, made public on October 13th. Mr. Harrison discusses the effects of the war upon the railways of the South and upon the Southern Railway in particular, and adds:

> In such a crisis, when more than ever it is apparent that the interests of the railway company are identical with those of the public it serves and that it can prosper only as the communities which it serves develop and grow, it is gratifying to be able to state that there has never been a time within its history when the relations of Southern Railway Company were more close and cordial with the people of the South than now. The determination of the management at all times to deal frankly and fairly with the public has been instrumental in bringing about this condition. The era of suspicion and distrust on the part of the public seems to be nearing an end, and the purposes and ideals of the company are beginning to be understood and approved. No better omen for the future of the company can be found than that discernible in the growing good-will in the public mind.

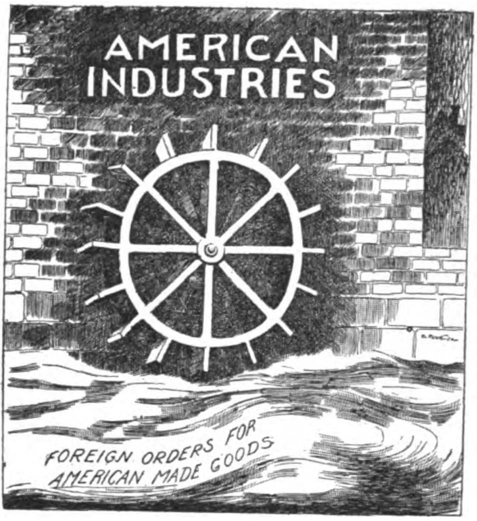
Speaking of the general effect of politics upon railway developments, Mr. Harrison says:

> The slackening in the general volume of business done in the United States, which has been so marked during the past year, was felt last of all in the South, but had become part of the problem of management of this company with the opening of the calendar year 1914. The high level of expense of operation is maintained not so much by any natural economic law, not by any deliberate intention or neglect of management, as by general social tendencies which are in substantial measure abnormal and beyond the control of management. It can hardly be expected that the operation of an American railroad shall be again on a normal basis unless, and until, the question of the railroads shall cease to be a factor in American politics. To state this fact is but to repeat the statement of the contemporary plight of the railroads which has been so frequently urged upon the American public in recent years. It is mentioned here simply to illustrate its application to the fortunes of Southern Railway Company.

WESTERN ROADS TO RECTIFY FREIGHT RATES

Weeding out of inconsistencies in the Western freight and passenger rate structure, applying advice extended by the Interstate Commerce Commission to the railways as to the manner in which they may meet at least partially the difficulties arising from declining earnings and advancing expenses, is the aim of the proposed rectification of tariffs in Western territory, served by roads operating west of Chicago, St. Louis and the Mississippi.

The basis for the readjustment, as pointed out by the Bureau of Railway News and Statistics in an outline of the proposed changes, is the Interstate Commerce Commision's insistence that each branch of the railway service "should contribute its proper share of the cost of operation and of return upon the property devoted to the use of the public"; and no changes will be made except those based upon recommendations or findings of the Interstate Commerce Commission. Characterizing of this rectification as a "general advance" thus is inaccurate.


AMERICAN INDUSTRIES
FOREIGN ORDERS FOR AMERICAN MADE GOODS

THE RISING TIDE

In Western territory, as the Commission found to be the case in the East, many unremunerative rates remain which had their origin in the past under fierce competition or under the menace of powerful shippers. Some of these may have been remunerative in the past, but they are not now; and in many instances the shippers themselves admit the rates to be too low. In view of this the Interstate Commerce Commission in the Eastern rate case advised the railroads to "examine carefully their freight rates, rules and regulations with a view to increasing rates that are found to be clearly unremunerative and modifying burdensome rules and regulations." It is this the Western roads purpose to do.

What added revenue may accrue to the carriers as an offset to the excessive rise of late years in expenses, when inconsistencies of this character have been weeded out, is purely speculative, as shown by the fact that irresponsible estimates already made show ridiculously impossible discrepancies. Railway executives themselves cannot estimate, as the scanning of tariffs is not yet near completion; yet it may be stated with certainty that all possible addition to revenue cannot approach the five per cent being petitioned for a second time by Eastern railways as essential relief from long standing difficulties which have been increased since the outbreak of the European war.

Transcontinental rates will remain untouched in the Western rectification process. Packing house rates, long recognized as excessively low, can enjoy only a partial rectification as rates from Kansas City, applying to a great bulk of the business, can be raised only nominally, one railroad handling all of this traffic under contract; but elsewhere the aim is to render this traffic self-sustaining. Rates on bullion, as copper and lead; some rates east of the Mississippi on grain and coal and certain other commodities long recognized as unduly low constitute the principal other proposed changes.

Existing special services also are to be examined, following the Commission's advice that the roads ascertain to what extent these services, for which no charge, or a non-compensating charge is made, "constitute an unjust burden upon the carriers."

Passenger fares, wherever the rate within states has been two cents per mile, have been made generally on the two-cent factor between states with some exceptions, as in Oklahoma, where the interstate fare into Oklahoma has been three cents. In a test case brought by Oklahoma, Arkansas and Missouri the carriers have been sustained in this by the Commission, which found the three-cent rate not unreasonable; while even in the densely populated Eastern States the Commission previously had found existing passenger rates non-compensating and advised their increase.

Western passenger fares will not be increased to any specified rate per mile but will be rectified here and there where lowest and least justifiable, having been brought down by competition to a level pronounced inadequate by the Interstate Commerce Commission itself.

RATE INCREASES IN AUSTRALIA

Viewed from whatever angle, the recent attitude of our public regulators towards the railroads, appears incomprehensible. In a number of foreign countries, both as regards privately and publicly owned railroads, the necessity for increased rates has, in many instances, become clearly apparent, and action along these lines promptly taken, notwithstanding the fact that foreign rates are, in general, largely in excess of those in effect upon United States roads, and operating costs much smaller.

Increases in freight rates of 10 per cent; and in passenger fares ranging from 5 to 50 per cent, are the means by which the government railways of New South Wales, Australia, have undertaken to combat the world wide advance in costs of railway operation. The annual report of these railways just received in Chicago from Sydney by the Bureau of Railway News and Statistics, presents detailed outlines of the advances, and attributes them almost wholly to the expansion in wages and costs of materials.

This is looked upon as the most striking recent instance of the facility with which the state owned railway systems have been adopting advances in rates to cope with the rapid rise of late years in operating expenses, and is in sharp contrast to the experience of the private transportation systems of the United States, where in spite of recognition by the Interstate Commerce Commission of pressing need, Eastern railways have been refused a five per cent advance covering only freight rates, and under emergencies caused by the European war the roads have had to petition for a reopening of their case owing to actual threatening of their credit structures.

Increased charges for freight transportation placed in effect by the New South Wales government roads are uniformly 10 per cent, and with the estimated annual increase in revenue are as follows:

First and second class freight rates	$350,000
Class A, B, and C. mileage rates	230,000
Live stock rates	300,000
Total added freight revenue	$880,000

Advances have been made in passenger fares, despite the fact that "cheap excursion fares" already were on a basis of four cents per mile first class, and two cents per mile second class, while "special cheap excursion week end rates" were 3½ cents per mile first class and 1¾ cents per mile second class, compared with an average of only two cents per mile received for all passenger traffic by United States railways in 1913.

The increases range from five per cent in the case of through fares, to 50 per cent in second class excursion fares. With the percentages of increase, and the estimated annual additions to revenues the advances are as follows:

Season tickets, 20 per cent	$285,000
Through fares, 5 per cent	460,000
Cheap excursion fares from 4 cents to 5 cents per mile 1st class (25 per cent) and from 2 cents to 3 cents per mile 2d class (50 per cent); special cheap excursion week end fares from 3½ cents to 4 cents per mile 1st class (14 per cent) and from 1¾ cents to 2 cents per mile 2d class (14 per cent)	50,000
Workmen's fares increased to basis in effect in 1907	75,000
Total added passenger revenue	$870,000

Total new yearly revenue from both services is estimated at $1,750,000, or more than 5.3 per cent of gross operating revenues in 1913. A similar increase in the United States would amount to almost $169,000,000.

In explanation of the increases the minister of the government railways points out that expenses rose $3,742,000 in the last year, of which $2,704,000 was in wages. The operating ratio rose from 68.8 per cent in 1913 to 69.9 per cent in 1914. Wages took up $49.68 of every $100 revenue in 1914 against $48.80 in 1913.

THE EFFECT OF UNRESTRICTED DEVELOPMENT

Recently A. E. Goff, of the Great Indian Peninsula Railway, concluded a tour of the Canadian railways and was evidently greatly impressed with the remarkable progress made in that country during the past few years. He spoke in glowing terms of the great engineering obstacles overcome, the wonderful terminals, the magnificent railroad hotels and other developments, which, taken altogether, go to make up a progressive and efficient transportation plant.

We have not the slightest doubt that Mr. Goff's high praise is well-founded and well deserved. The Canadian railways are making splendid progress and in the past, no doubt, have drawn much of their inspiration from the developments of this country.

At the present time, however, there is a grave and deplorable difference between the railway activities of these two great nations. In Canada, government officials are working shoulder to shoulder with railway officials in an effort to develop a magnificent and efficient plant. These harmonious relations are reflected by the public, and the entire country's attitude is extremely helpful for the rapid promotion of this great industry. In the United States, politicians have used the railways so long for the exploitation of their own selfish ends, that the greatest and most progressive transportation system of the world is, at the present time, staggering under an oppressive load of unfair restrictions and regulations, with its actual solvency seriously threatened. No one really doubts that the integrity and ability of the railway officials of the United States fully measure up to those of our Canadian brothers. The fault lies very largely with our methods of regulation, which have so strangled railway development by their restrictive influences, that the situation has become intolerable. May a Moses yet be found among government regulators with a vision clear enough, with a heart stout enough, and an honesty of purpose high enough to compel a fair consideration of their difficulties.

EFFECT OF THE WAR UPON AGRICULTURAL PRODUCTION

It is rather surprising that more attention has not been paid, as yet, to the necessity for greater production of agricultural products during the coming year in order to satisfy the abnormal demands which Europe will make as the result of the war. American farmers are offered an unusual opportunity for greater profits by increasing the acreage of tillable lands and by adopting intensive methods for enlarging the yield.

If the war continues agricultural production in Europe will undoubtedly be greatly diminished, perhaps for several years, with the result that enormous demands will be made upon our agricultural resources. A higher agricultural efficiency, as well as an increased acreage are both necessary to satisfactorily meet the situation. Such developments would not only hold in check the high cost of living but would greatly increase the profits of the farmers and enable them to satisfactorily fill the large orders which will come from Europe.

A fifteen per cent increase in food production would add to the wealth of the nation approximately $1,000,000,000, or even more, should higher prices prevail. That the demands for this extra production will more than justify the effort, is becoming daily more fully appreciated as the devastating effect of the European war becomes more fully recognized.

Railroad officials should make it their

business to see that the farming communities along their lines are familiar with the necessity of bringing their production up to the requirements which the European situation will place upon the food supply. An appeal should at once be made to the farmers to sow a larger acreage of wheat and winter oats, while there is yet time. Additional corn land can now be sown in wheat in the corn belt to bring about a material increase in the winter wheat production without materially interfering with other crops.

The production of all canned products should also be greatly stimulated by the European war, increasing the home consumption of such products and rebounding to the enormous benefit of the canned goods industry. The agricultural and industrial departments of our railway systems thus have offered them unusual opportunities in the development of new business, and exceptional activities in such departments may be confidently expected. It means a greater tonnage for the railways and a larger prosperity for the American people.

THE INFLUENCE OF BUREAUCRATIC METHODS

The Congressional Committee which has been busy during the past year studying postal affairs, has brought to light not only the fact that the railways are badly underpaid for carrying the mails, but that the methods of the Post Office Department and its continuous demands upon the carriers for information upon which it has laboriously built its false structure of railway mail pay, have proved tremendously expensive. The entire report is full of the most conclusive evidence of the pernicious influence of bureaucratic methods.

For eight separate investigations of railway mail pay and Post Office Department affairs, in progress almost one half of the entire time since 1876, figures compiled by the Bureau of Railway News and Statistics from the recent Bourne report to Congress on mail pay show that the United States government has spent over $181,000. To furnish information required of them in these investigations the railways have spent more than $2,300,000.

Yet as a net result of these expenditures the latest investigation finds existing mail pay still grossly unprofitable; methods of computation "so complicated and so difficult that a business man of average ability and business experience could not read the existing laws and then compute the amount that should be paid any road," while the Post Office Department itself is "utterly lacking in knowledge of its own business affairs," and "has evinced a determination to secure a reduction in the total amount of railway mail pay, with little, if any, regard to whether such a reduction is justified or not."

Investigations which have been made with expenses to the government, are as follows:

1. Hubbard Commission, 1876-77	$16,000
2. Elmer-Thompson-Slater Commission, 1883	10,000
3. Wolcott-Loud Commission, 1898-1903	21,852
4. Joint Com. on 2d class mail, 1906-07	10,534
5. Joint Com. on Business Methods of P. O., 1907-09	78,207
6. Hitchcock Investigation, 1907-11	19,500
7. Hughes Commission, 1911-12	18,566
8. Bourne Commission, 1912-14	6,560
Total	$181,219

For the Hitchcock investigation alone the railways, to furnish the information sought by the Department, spent $250,000, more than ten times the cost to the government. The net returns were a widely circulated allegation that the railways were overpaid $9,000,000 yearly, though the department admitted this would be wiped out were the roads allowed a return on capital invested in mail service; and proposed rates found by the Bourne Committee to be "so small that if similar unprofitable rates were made on all rail traffic the roads would necessarily have to go into bankruptcy, because there would be no sufficient allowance for capital charges."

Present methods of mail pay, despite the large expenditures on investigations, are pronounced "antiquated," unscientific and unsatisfactory." Quadrennial weighings are denounced as unsatisfactory "because they make no allowance for changes in quantity of mail during the four-year periods." Payment is recommended for terminal services as "it is no more reasonable or just to compel the railroads to deliver mail to a postoffice after it reaches the depot than it would be for the Interstate Commerce Commission to require railroads to furnish taxicabs free of cost to take passengers to their homes * * * * or motor trucks to move freight."

As a victory second only to the unqualified vindication of the railways' claim that mail pay is too low is seen the finding that "railroads are entitled to be paid for mail transportation on a commercial basis," Chairman Bourne believing even that in justice "the railroads should receive a higher car mile revenue for mail transportation than for passenger service."

Will this vindication, railroad men are asking, like others before it, find its way to some pigeon hole, and its expenses consigned with what have gone before to the limbo of forgotten things?

EXPRESS VERSUS MAIL PAY

The Railway Committee, representing the carriers in the matter of mail pay, have recently issued a circular calling attention to the fact that the Joint Congressional Committee on Railway Mail Pay finds that the railroads are better paid for serving the express companies than for serving the Government in carrying the mails. The Joint Committee also holds that the comparison of mails and express receipts furnishes no basis for the claim that the railroads have been overpaid for carrying the mails. To quote from the report:

"The express service undoubtedly costs the railroads less than the mail per car-mile.

"Railway employes help to load and unload mail but not express matter, except where employes are jointly paid by the railroad and express companies.

"Express cars are cheaper than equipped mail cars.

"Railroad companies are liable for injuries to mail clerks but not for injuries to express employes.

"Express matter is handled at all times by express company employes.

"A railroad company not only handles the mail at and in stations, but in a great many instances bears the expense of transporting mail between the station and the post office.

"Mail must be carried on all trains, including the fast trains, while express matter is limited in frequency and speed of service.

"Postal employes are carried free on railroads while on official business, whether connected with railroad mail service or not. Transportation of express employes is reciprocated by free services rendered by the express companies for the railroads."

As to how the receipts of the railroads from mail and express compare, the committee reviews the evidence for the test month of November, 1909, and states this conclusion:

"Suffice it to say that we are convinced that the railroad earnings from mail were in 1909 decidedly lower than from express on a car-mile basis, which is the only basis for comparison we have.

"Certainly there is no warrant in the oft-repeated assertion that the Government is being robbed in its mail payments by comparison with what the express companies pay. There has been an amazing amount of reckless assertion on this subject."

In ten years railway mail pay increased only 22 per cent, while the earnings of the railroads from express traffic increased 91 per cent, according to the records of the Interstate Commerce Commission placed in evidence before the Joint Committee.

In the hearings before the committee the railroads proved mathematically that express cars earn an average of 19 per cent more, for each mile traveled, than mail cars.

In spite of this favorable showing for express business, it is now officially admitted that the mail service is more burdensome and costly to perform. How unfair is the present system of railway mail pay is strikingly illustrated by the statement that the carriers are paid approximately 50 per cent of the total gross receipts of the express companies, while they receive less than 20 per cent of the gross receipts of the Post Office Department for a similar but much more costly service.

GRATIFYING RESULTS OF THE SAFETY MOVEMENT

Reports are being received with increasing frequency showing the beneficial influence of the safety movement which is now in vigorous operation on nearly all of the more important railways. Not only are individual roads constantly reporting a decrease in all classes of casualties, but regulative bodies are taking cognizance of the improvement manifested and are congratulating the railroads upon the beneficial results obtained. The following statement recently published by the New York Public Service Commission, strikingly illustrates the influence of this movement:

The transportation division of the up-state Public Service Commission has compiled a table of the accidents on steam railroads in this state for the years ending June 30, 1913 and June 30, 1914, which shows that the decrease in passengers killed is over 72 per cent and the decrease in passengers injured 46 per cent. A year ago 51 passengers were killed during the preceding twelve months. But 14 passengers on steam railroads met death during the last year.

Unfortunately no figures are available as to the number of passengers carried within the state of New York, these reports being made for entire rail systems within and without the state, but the fact that but fourteen persons met death of all the vast number which must have been carried during the year speaks well for the safety of railroad travel in this state. Nine hundred and forty-three passengers were injured during the last year as against 1,746 the year before.

Casualties among railroad employes also show a gratifying decrease, but their number is still very large. One hundred and ninety-six employes were killed and 3,022 injured last year as against 250 killed and 3,760 injured the previous year, a decrease of 21.6 and 19.6 per cent, respectively.

The only class of railroad fatalities which shows an increase is that of the non-trespasser—persons neither employes nor passengers killed while in places where they had a right to be. A very large percentage of these fatalities were at grade crossings. One hundred and thirty-nine non-trespassers were killed in the year ending June 30, 1914, as against 129 for the year before, an increase of 7.2 per cent. Six hundred and sixty-one non-trespassers were injured as against 692 the year before, a decrease of 4.5 per cent.

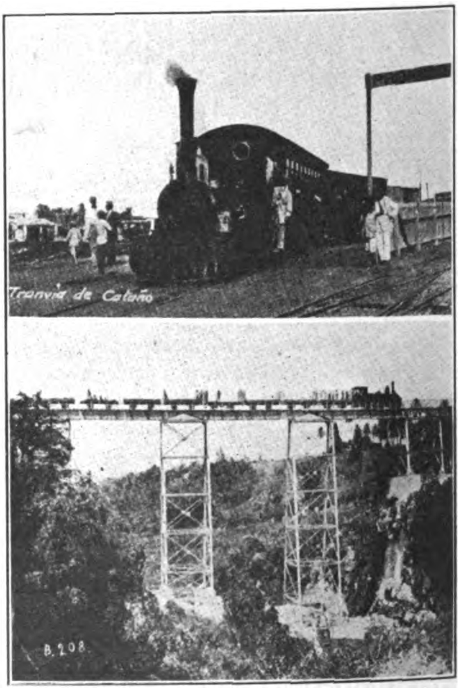
Three hundred and forty-eight trespassers were killed last year as against 393 the year before, a decrease of 1.5 per cent and 358 trespassers were injured as against 409 injured the year before, a decrease of 14.9 per cent.

The total of all classes killed last year was 697 as against 823 the year before, a decrease of 15.3 per cent. Four thousand nine hundred and eighty-four in all were injured as against 6,609 the year before, a decrease of 24.6 per cent.

The last paragraphs of this statement are of peculiar significance, in that the only increase in accidents involves trespassing, for which the government is really directly responsible. In view of the splendid progress which has been made in the general safety movement and in the attitude taken by government officials in its promotion, it would appear about time that they accepted their full responsibility and devise practical means and methods by which the intolerable evil of trespassing can be abolished.

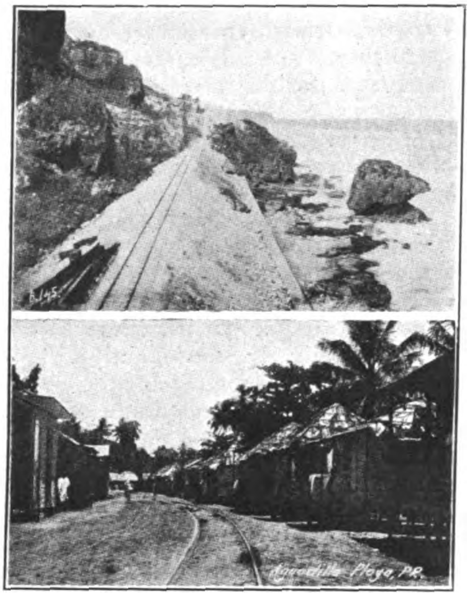
AMERICAN RAILROAD COMPANY AT PORTO RICO

The *Railroad Trainman* for October publishes a brief but interesting account by R. H. Newcomb on the so-called American Railroad Company which is operated on the island of Porto Rico. This company, by the way, is owned by French capital. The main line, which runs from San Juan to Ponce, is 172 miles long and a day's work on passenger or freight train is about half of that mileage as both classes of service make about the same number of hours. No overtime is allowed and there is only one brakeman in every class of service, although passenger trains have a baggage man and chair car porter. No cabooses of any kind are furnished freight trains and while a few freight cars are equipped with air there has apparently no attempt ever been made to use it. Mixed trains are frequently run with the freight cars behind the passenger cars. No tail end signals are used during the day time and at night the lamp carried by the brakeman on top of the rear car serves that purpose. Labor unions are not recognized and promotion appears to be largely by favoritism. The rates of pay per week are as follows:



TWO VIEWS OF THE PORTO RICO RAILWAY.

First, showing a station on short road between Catano and Baya, and second, railway trestle of steel construction.



Two Views Along the Main Line of the American Railroad.

This road closely follows the coast line for a great part of its distance.

Station agents $11.50, clerks $3.50, engineers $17.50, firemen $7.00, first assistant section foreman $9.00, second assistant section foremen $7.00, laborers $3.00, time keepers $4.50, inspectors $5.00.

The accompanying illustrations give an excellent idea of the appearance of this remarkable railway system and the country through which it passes.

CAMPAIGN FOR QUIET STATIONS

In the May, 1914, issue of the Railway World attention was called to an order issued by the Northern Pacific to the effect that loud talking, inging of engine bells, sounding of whistles, blowing off steam and other avoidable influences, over which employes have control, were to be avoided and reduced in the future to a minimum and that the coupling of cars at stations, setting out or picking up cars, were also to be controlled by signals and done as silently as possible.

The railroads have, of course, for years been striving to do away with these avoidable noises but there has been added evidence recently of a more determined effort along these lines. Service competition has largely displaced rate competition in modern railway operations, and any improvement which will prove conducive to the happiness or comfort of the traveling public is a distinct advantage to the road which adopts it.

From San Francisco comes the report that the Southern Pacific is giving this matter increased attention and it is stated that Vice-President W. R. Scott has just issued through the division superintendents an appeal to all employes of the company, especially train and yard crews, asking them to increase their efforts to eliminate all unnecessary nocturnal noises and requesting furthermore, suggestions for improvement of the service in this regard. Mr. Scott's idea is evidently to prove that real sleeping cars are within the realm of possibility everywhere on the Pacific system, hence, his appeal to the men to co-operate for improvement. This is a movement with which every road desiring to improve popular sentiment towards the railroads should find it possible to co-operate most heartily.

NEW YORK COMMISSION APPROVES NEW YORK CENTRAL CONSOLIDATION

The Up-State Public Service Commission of New York has approved the consolidation of the New York Central and Hudson River Railroad Company with the Lake Shore and Michigan Southern Railway Company, and other railroad corporations already controlled through stock ownerships by one or the other of the two lines, into the single corporate entity, the New York Central Railroad Company, with principal offices at Albany. The matter has been pending before the Commission for some months, during which time various issues involved have been heard before the Interstate Commerce Commission, the United States courts and the regulative bodies of other states. In the opinion written by Chairman Van Santvoord, in which all the members of the Commission concur, the Chairman says:

> We find nothing to indicate any intent on the part of the petitioners to over-capitalize either in stock or bonds. The proposed stock issue of about $250,000,000 by the new company is some $50,000,000 in amount less than the combined capital stock of the constituents; while the outstanding bonded indebtedness of the new company on account of the New York Central-Lake Shore collateral trust bonds can at no time and under no circumstances exceed the precise amount at that time unpaid of the original debt, whether represented by the original bonds or by the new 4's.

The opinion comments favorably on the improved position which the consolidation should create for the business now carried on under many distinct corporate heads. It is suggested that these benefits will be not only along the lines of economy and efficiency in management, but that the financial prospect created is both novel and pleasing.

It had been urged by the opposition to this consolidation that "a permanent system of financing," created by the consolidation was not desirable in that it would make more difficult the possible future dissociation of the properties involved. Of this Chairman Van Santvoord says:

> This Commission is not impressed with the impending danger of a "permanent system of financing" which may attend approval of the consolidation; rather are we impressed with the petitioners' "sublime audacity of faith" in creating such lofty ideals and cherishing so magnificent a hope as are embodied in a permanent system of financing for a trunk line railroad. We are inclined to believe that a corporate management which can assuredly usher in that heretofore unheard of—if not undreamed of—accomplishment in the realm of railrod financing deserves every proper encouragement in its efforts to attain that which would perforce merit general approbation. And, finally, we concur in the opinion of the Interstate Commerce Commission that from the standpoint of economy and operation and facility in financing the proposed consolidation is warranted. The statutory formalities prerequisite to the authorization of the proposed consolidation have been complied with; and there is proof, and the Commission is of the opinion and finds that the operation of the consolidated properties and the financing of the same under a single corporate entity would through certain incidental economies and facilities in administration, both physical and financial, inure to the advantage of the owners of the enterprise, and presumably to that of the general public as well.

The opinion takes up in detail the five principal objections against the consolidation raised by Cadwalader, Wickersham and Taft, representing William A. Read and other Lake Shore minority stockholders, and J. Aspinwall Hodge for C. H. Venner and Company and other stockholders of both Lake Shore and New York Central.

"These objections and others of a minor character have been urged not only before this Commission, but as well before the Interstate Commerce Commission in its Congressional investigation of the proposd merger, and upon no less than three applications to the federal courts for restraining orders in connection with the projected consolidation," says the opinion, and adds that the proceedings referred to have confirmed the Commission in the belief that the objections are not valid.

The most important point settled by the decision, one that has not before been raised since the passage of Section 141 of the railroad law is as to whether or not an increase in interest rate—in this instance from 3½ per cent on Lake Shore collaterals to 4 per cent on new bonds to be issued in exchange therefor — constitutes a violation of the prohibition contained in the section referred to against the issue of "additional securities" "in connection" or "in consideration for" consolidation.

It is the opinion of the Commission that the intent of the prohibition contained in Section 141 is to prevent what may be termed "capitalizing the consolidation agreement.' It finds the language of the act clear on this in respect to stock issue where the prohibition manifestly has reference only to the amount of stock, and holds that the same intent must be imputed to the language with regard to bond issue, though that language is somewhat less definite. The Commission points out that if this clause were to be interpreted as argued by the objectors to the consolidation it would effectually prevent the issue of all refunding bonds in consolidation proceedings. It finds in the statute no prohibition against the increase in interest rate to induce bondholders to consent to consolidate, the reason for the increase in interest rate in this case.

The opinion says that the views of the Interstate Commerce Commission in a report favoring the consolidation, and of the Federal Court in denying an injunction restraining the consolidation seem to be sufficient answer to the allegation that the consolidation is in violation of the Sherman act. It was argued that inasmuch as the Lake Shore now controlled through stock ownership the Nickel Plate and other roads, which, it might be argued, competed with it between Buffalo and Chicago, such control through stock ownership being illegal, the consolidation of the property was but confirmation of a violation of law. The opinion quotes Judge Grubb, of the Federal Court, to the effect that a consolidation can add nothing to the completeness of control of competing lines and that even if this control were hereafter determined to be illegal, the consolidation would in no way release the parties from their responsibility for such illegal control.

Upon the contention that the consolidation is in violation of the New York State anti-trust act the Commission finds no evidence to this effect. Such evidence is to the control of competing lines as has been submitted, the opinion points out, relates to interstate commerce and is without the jurisdiction of the Commission.

The opinion, making clear that the Lake Shore minority stockholders, now holding approximately one tenth of the outstanding stock of the Lake Shore, after consolidation will own one tenth of a stock issue which not only represents the Lake Shore, but in addition all the property of the New York Central. On this point Chairman Van Santvrod says:

> And while, of course, the question of subsequent dividend certainty, depending on the earning capacity of the new company, must also be considered, we find nothing in the record which would justify us in withholding our approval of the consolidation on the ground that the net result of the present and prospective indebtedness of the New York Central and of its earning capacity under the new conditions will, under the proposed consolidation, prove unfair and inequitable to the Lake Shore minority interests.

There are involved in the consolidation 5,335 shares of a preferred or guaranteed Lake Shore stock. This was originally issued by the Michigan Southern, Northern Indiana Railroad Company in the year 1857, and on it the payment of a ten per cent preferential dividend was guaranteed. When this original road was acquired by the Lake Shore it still maintained in accordance with the law this ten per cent preferential dividend. In the present case the Commission finds that the record does not contain evidence sufficient on which to base a definite order. It suggests as a solution of the difficulty that, as five shares of the New York Central stock are to be issued for one share of Lake Shore, such new Central shares as are issued to the holders of this "preferred" stock shall be endorsed with a guarantee of payment of two per cent preferential dividend, thus assuring the same pecuniary return to holders of the guaranteed stock. If the petitioners do not accept this suggestion they will be obliged to submit further evidence on this point.

Contemporary Opinion

Business Men Plead for Rate Advance.

Doctor A. R. L. Dohme, president of the New York City Wide Congress, has addressed an open letter to President Wilson urging that the railroads be allowed the rate of increase they have been asking. The plea bristles with facts and arguments, and from a business standpoint its conclusions seem almost inevitable.

Dr. Dohme says that many of the roads face receivership unless some relief is given, and he points out that the business interests of the country generally favor the increase, and as this element will have to bear the burden, there was no good reason for the conclusions of the Interstate Commerce Commission in the late decision.

The letter places this local business organization in line with many others throughout the country which have taken the same position, though the Baltimore body is perhaps the first which has made its appeal directly to the President.

In his letter Dr. Dohme says:

"The Interstate Commerce Commission has handed down its railroad rate decision after a long delay and after many railroads have gone into receivers' hands, because they could not make ends meet during that long delay. The decision is so impractical and has so paternal a flavor that its main result will be to absolutely prevent further growth of mileage or development of territory and as well to compel many more railroads to go into receivers' hands.

The commission apparently intends its decision to be a good parental scolding and thrashing. This, however, does not help the child to get a new pair of shoes, which it needs badly.

The company whose president I have the honor to be is in a very fair position to speak upon this question, because it ships all over the country and prepays its freight at a dead expense to itself. It hence would naturally like to see freight rates reduced. But as business men who appreciate that you cannot expect competent service from a sick employe, we know that unless we agree to pay more for freight expense the railroads must give us less efficient service, just as we must give less efficient service if we are making deficits instead of profits from month to month.

The railroads are the arteries as they are the barometer of trade and carry the life blood from the factory to the user just as the arterial system does. If the cost of doing business continually increases, but the price of the products of the business are held steadily at one figure the business must die, and that is the inevitable fate of the railroads.

When a man is sick unto death because of lack of nourishment as well as because of a weakened condition brought on by past indiscretion, the doctor who would treat the patient with lectures upon how he could have been well if he had not years before been indiscreet in diet, hours of work, etc., would be discharged, driven out of town. Yet, this is exactly what the Interstate Commerce Commission is doing.

All men who have studied railroading and who are practical men and not theorists, know that the rate decision handed down last month is unworthy of the body that handed it down. It benefits no one except the theories of those who propounded it. The shipper, the railroads, the employes of railroads, merchants, manufacturers, their employes, the holders of securities of all railroads, miners, farmers, charities of all kinds—and this covers the vast majority of the people of this country—will distinctly and directly suffer financial loss and personal inconvenience and discomfort as well as suffering as the result of this railroad rate decision.

"I do not know the politics of the members of the Commission, and I do not care to know them, but I do know that their decision is a destructive and not a constructive one; it is reactionary and not progressive and it corresponds with the tendency of the present Government to break up into little bits all things of any size because of apparent fear of great things."

The Duty of the Interstate Commerce Commission.

COMMENTING editorially upon the stability of American finance and trade since the suspension of business by the warring nations of Europe, "The Kernel," a New York financial publication, reviews the conditions of international commerce which brought about the closing of the New York Stock Exchange and points to factors which should place this country on a sound basis before the world. The article says:

"Pressure to sell securities exceeds the desire to buy them the world over at this time. The stock exchanges of the world were closed because of a panicky and overwhelming selling mania, and since conditions have not been such as to permit of the development of keen demand. Offerings are much in excess of bids. Europe holds between $5,000,000,000 and $6,000,000,000 of American securities. Europe wants gold. We must conserve our gold supply in the present circumstances. There is no better demonstration of this than comparison of the fluctuations in the stocks of gold in the Bank of England and in the New York Clearing House institutions during the last 3½ months. From June 4th to September 17th, the Bank of England gold holdings rose from $179,961,590 to $243,602,460. From June 6th to September 19th the gold holdings of the New York banks and trust companies fell from $441,715,000 to $320,549,000. While the Bank of England's stock of gold has risen $63,641,000 that of the New York City institutions has shrunk $121,166,000. It is the European craving for gold and its anxiety to realize on such securities as can be sold that keeps the New York Stock Exchange closed. To open the stock exchange for trading in the regular way would mean that we were willing to pay gold for such of the five to six billions of American securities held abroad as the foreigner desired to sell. The foreigners might offer but a small proportion of their total holdings in Americans and yet the amount would be much larger than we could reasonably take on a gold basis under present conditions. On July 30th, the last day our stock exchange remained open, foreign selling amounted to not less than $100,000,000. This statement of facts makes clear the wisdom and necessity of keeping our stock exchange closed until gold is less attractive and securities are more attractive, or until we are in position to offer acceptable exchange other than gold for foreign holdings of our securities, either merchandise or a currency guaranteed by the United States government—the latter might be made gradually redeemable in gold.

"To do business, make your offering attractive. This is, the first business principle, whether in kindlings or government loans. The great majority is clamoring for the reopening of the stock exchange. What should be the first step toward such an undertaking? It should be to do something to make the securities listed on the stock exchange more attractive than they now are. Who possesses the power to restore attractiveness in American securities? The Interstate Commerce Commission has that power. How shall it proceed? By granting, without "hemming or hawing," a liberal increase in freight rates such as will restore the integrity of American Railroad securities in the eyes of investors, not only of Europe, but of the United States. The present is an emergency—the greatest ever faced by this country. A little bridging and the United States may step upon a solid rock which will idefinitely hold it in position of first commercial importance indefinitely. Will the government authorities of the United States permit the nation to step into this coveted position? The question is not one of patriotism, but of business common sense.

"Should the Commission later discover that it had gone too far in permitting flat rate increases, it could easily right its error by new rulings ordering reductions. Before now the Interstate Commerce Commission has reversed itself. All wise men have reversed themselves. The United States Supreme Court has reversed itself. Before the war the people had begun quite generally to say, to themselves and openly, that business had been pounded enough during the past ten years and the last month of war has done more to further develop this more favorable attitude than a normal year could have done. It is not improbable that in the same or a greater degree the war conditions have developed the outlook and the practical business capacity of the Interstate Commerce Commission.

"Hostile attitude toward the railroads, largely developed by demagogues and crystalized in a long succession of unfavorable rulings by government bodies which try more or less in their actions to reflect public sentiment, has worked to the point where the people themselves are beginning to realize the bad policy of it. For years the savings banks have been marking down the values of their securities as a result of anti-railroad legislation and decisions. This marking down process has got to the point where it threatens to bring about forced reduction in the rates of interest paid on savings deposits. So long as reduction in rates and increases in wages and costly equipment requirements confined their injurious effects largely to the rich investor the policy was popular enough. To-day this policy is actually unpopular among all classes. The pendulum was bound to swing back, but the wait for the back swing has been tedious for capital and costly for labor, though the latter has been slow to realize the cost of whatever pleasure or satisfaction it has gained through baiting capital.

"Not haste, but dispatch, should be used by the Interstate Commerce Commission in rehabilitating at once its own integrity and the integrity of American securities in the present dire emergency by granting a liberal increase in freight rates to the railroads, the inadequacy of whose revenue is admitted in its previous decision in the Eastern Rate Case while at the same time it withheld the necessary relief. Such action will do more to immediately re-establish confidence and credit in the United States than anything else that may be done. "The Kernel" believes the Interstate Commerce Commission will recognize this duty and perform it."

A European Opinion on the American Rate Situation.

(From the "London Statist.")

IT is a matter for sincere congratulation to all interested in the economic welfare of the United States that the Interstate Commerce Commission has agreed to reopen the application by the Eastern Roads for an advance of five per cent in freight rates. The new inquiry will commence on October 19th, and it is stated will be confined to a presentation of facts relating to recent developments. That, in view of the exceptional existing circumstances, the railway companies will not have again appealed in vain for permission to make a small increase in their transportation charges is generally believed. Apart from the question of the abnormal rise that has occurred in expenses, the railways of the United States are faced with the difficulty of having to meet before the end of 1915 bond and note obligations aggregating over £100,000,000. In the highest public interest it is, of course, imperative that these obligations shall be met. With net income impaired and the rate of profit earned on the capital of the railroads declining, the raising of capital, not only to enable the companies to keep abreast of the times, but even in this emergency to place them in a position to anticipate the demands of an expanding commerce, is no easy task. Simultaneously with the great falling-off of income general credit conditions have broken down, and the absolute and immediate necessities of both public and private borrowers of money in the States and elsewhere have raised interest rates to a level unthought of a few months ago, rates much higher than the present net earnings return upon the railroad property of the United States.

Constructive Action the Need of the Hour.

LIKENING the war in Europe with its fearful loss of life and terrific destruction of property to the "fearfully destructive war against property and business interests generally" which it says has been going on in this country during the last ten or fifteen years, *The Manufacturers' Record* makes an editorial plea for constructive action which will tend to relieve business unrest and restore prosperity.

"We have very nearly wrecked the railroads of the United States, representing about 40 per cent of the railroad mileage of the world," comments *The Record.* "We have wrecked," it continues, "a great many of the business operations of the country. We have sown distrust which, in its influence on business operations, has been almost as destructive as the bullets which are being sown broadcast on the battlefields of Europe. We have waged warfare against prosperity; we have waged a relentless fight against the railroads and other corporations of the country.

"If the United States had been in good business shape and had not had these last six or seven years of down-grade business, due largely to the politicians' warfare against business which commenced fourteen or fifteen years ago, we would have seen no such disastrous conditions existing in the country as we find to-day. In state legislation we have carried on a campaign as vigorously and in its results as vicious as that which has been carried on in national legislation. We are paying the penalty, and, seek to disguise it as the agitators may, our present railroad stagnation and very much of our whole business depression is due to this bitter warfare, and we might as well face the truth. It required no gift of prophecy to foretell the inevitable result.

"No one would be so foolish as to deny that some restrictive legislation was needed in many directions, but most of the evils complained of could have been overcome without the hostile legislation enacted. And never was there justification for the bitter, relentless effort of some politicians who sought to destroy merely to curry favor with the mob spirit of the day."

The Record suggests a remedy through a campaign "to down or drown the agitators, encourage by all legal and moral means the investment of money in railroads and business enterprises, and give to the capital thus invested the freedom from hostile legislation which is killing; go back to the spirit of the day when counties, towns and cities bid against each other to offer the largest bonus to aid railroad building; go back to the time when great enterprises and great individual successes were esteemed worthy of commendation, and help to kill off the spirit of the inefficient and the slothful who are unwilling to control themselves, but who want the government to control everything for their benefit. Stop praising the inefficient and the wilfully incompetent; stop catering to the agitator who lives by and on creating class hatred, and once more stand up and work for broad material upbuilding."

The Sherman Law and the Railroads.

DECLARING that after twenty-five years spent in experimenting the country and its lawmakers have not decided whether they prefer competition or regulation in the government of business, the *New York Journal of Commerce* makes the editorial comment that such a situation leads towards endless confusion and embarrassment.

"The Sherman law was not intended to apply to the railroads," says *The Journal of Commerce,* and it adds that "the action of the courts in applying it to the carriers involved the illogicality of forcing them to compete and at the same time depriving them of the means of competition, and substituting for competition regulation, which has in recent years been carried so far as to authorize determining prices that railroads may charge for their services."

Commenting upon the free service performed by the railroads, and which was referred to in the recent decision in the Eastern rate case, *The Journal* observes that "The free services that the railroads have been rendering, to the marked disapproval of the Commission, are concessions to big shippers to get their business. They are features of competition. Abolish all efforts to maintain railroad competition, prorate the business at uniform rates, and the railroads will be perfectly willing to sit still and let shippers bring their stuff to them. But if the public and the Commission will have competition, then the railroads must be allowed to compete."

And it adds: "What is really needed is an intelligent comprehension of the distinction between transportation and other industries, and an application of the principles on which the Cullom and Sherman laws were enacted, though the Cullom law is not entirely consistent on the point of regulation and competition. But instead of applying both systems to both classes of corporations Congress and the courts and public opinion ought to have learned by a quarter of a century's experience to depend on regulation mainly in the case of railroads, and on competition in the case of industrials."

President Ripley on Railway Regulation.

IN the 19th annual report of the Atchison, Topeka and Santa Fe Railway Company, President Edward P. Ripley takes occasion to call attention to the restrictive influences which have, within recent years, had a marked effect upon railway development, and for which to a large extent at least, government regulation has been responsible. While Mr. Ripley states that his Company has been less crippled by these conditions than some of those lines less fortunate, the margin of safety on which the Atchison is now compelled to operate is so narrow as to make the consideration of a liberal policy out of the question at the present time. To quote from his report:

"Your directors feel that heavy responsibilities devolve on them in the present state of governmental activities directed at the railroad industries. It has been found almost impossible to make even an approximate estimate of the cost of "regulation" which has been imposed on us by the State and National governments. Without criticising the policy of proper supervision, it is fair to say that many of the laws are not only expensive but in the opinion of your officers unnecessary and superfluous. Constant whittling of rates, plus constant legislation which adds to your expenses without adding to revenue, have had their inevitable effect. There are some evidences of a disposition on the part of those in authority to realize that great injustice has been done in the guise of regulation and that it is time to call a halt, but the relief which the railroads need cannot come until this disposition shall be transmuted from mere expressions of friendliness into positive remedial measures. General words of sympathy will accomplish nothing if governmental agencies continue in each specific instance to impose additional burdens or to find excuses for not granting specific relief. Hence your Directors deem it their duty again to warn stockholders that their interests are more endangered by the various governmental regulations than from any other source.

"But in making the foregoing statement the threatening attitude of the labor organizations must not be lost sight of as a vigorous second in the menace of the times. Your Company has always shown the utmost consideration for its employes, and as a class they are a credit to themselves and to the road. Left to themselves there would be little of which to complain, but the organizations as a body have been aggressively demanding increased wages for their members with no regard for the ability of their employers to pay, and have been steadily demanding, and frequently with success, many varieties of legislation, such as full-crew bills, designed to increase operating expenses. Between the repressive forces of Government and the demands of organized labor it is evident that the sum remaining as the share of invested capital is in serious danger.

"Under these conditions it is the intention of your Directors to make no additions or betterments, however desirable, which can not be paid for out of current earnings, and to continue the policy of incurring no floating debt."

Safety on Railroads.

(From the Troy, New York, "Times.")

IN view of the criticisms which allege carelessness and indifference on the part of American railroads, the showing made in a statement just issued by the New York Central and Hudson River Railroad Company has special interest. This report is to the effect that since February 1, 1911, not a passenger has been killed on the company's lines in any train accident. It further appears that within the time mentioned 1,266,654 passenger and 819,513 freight trains have been operated on the New York Central System, in all kinds of weather. The passenger trains carried 136,154,983 persons, a number which is more than 40,000,000 greater than that of all the inhabitants of the United States at the last federal census. It is difficult to grasp the magnitude of such a passenger business. But the one thing that stands out most impressively is the wonderful security in which the patrons of the road have traveled.

Unquestionably other well-managed railroads can make equally surprising showings, and it will be well for the public to weigh the significance of such exhibits before indulging in indiscriminate censure of railroad management. There has been a vast amount of irresponsible talk on the subject, the effect of which has been to bring unmerited opprobrium on American railroads. Yet the careful student of statistics long ago learned that much of the denunciation to which our railroad managers have been subjected was most unjust. There have been excellent reasons why railroad companies should seek to increase the safety of passengers, and few of them have spared effort in that direction. The result, as an analysis of the figures will prove, is that the fatalities on our leading railroad systems represent an extraordinarily small proportion of the passengers carried.

Let the fair-minded reader give a few moments thought to what this report of the New York Central Railroad Company means. During the operation of the great system for a period of more than three years and a half 136,154,983 persons have been carried, often under such weather and other conditions as to involve special peril, and yet not a passenger lost his life! It is doubtful if similar exemption from fatalities can be shown in any other branch of transportation. In fact, a study of industrial statistics will prove that the lives of passengers on a well-conducted railroad are far more secure than those of persons engaged in various occupations not regarded as particularly hazardous. The death rate in many communities considered fairly healthful is far larger than that of passengers on railroad trains.

The larger proportion of railroad fatalities may be attributed to the recklessness of persons who deliberately put themselves in the way of danger. Employes sometimes grow careless and neglect the safeguards which the companies themselves prescribe for the men. Trespassers on the right of way frequently fall victims to their own temerity, and this implies no reproach to the railroad companies, for the corporations are constantly warning persons against the risk involved. Accidents will happen, even when the utmost vigilance is enjoined; but it cannot be denied, in the light of the figures given, that passenger travel on the best American railroads is becoming remarkably safe.

Safety and the Individual.

(From the "Bulletin," Official Organ of the Southern Pacific Company.)

THE greatest and most important element in the promotion of safety is the human individual. Upon him rests the onus of responsibility for results. Results mean the extent to which accidents shall have been prevented and human life conserved.

In the work of minimizing mishaps and protecting life, there is an unlimited field for the railroad man—probably more so than that offered men in any other occupation. And to get results it is only necessary to keep the subject constantly in mind, and, instead of waiting for opportunity to present itself, look for it.

Not very long ago a locomotive fireman, at the risk of his life, leaned from the pilot of his engine and threw to safety from the track an elderly woman who had lost her wits when she saw the train bearing down upon her. But for the fireman's heroism a headstone would mark her resting place to-day and another name be added to the trespassers' death list. Had the fireman failed in his attempt he, too, would undoubtedly have been killed and two families would be in mourning. But his action deserves every commendation. He saw his duty—to save her if possible—and unflinchingly performed it. To-day he is a hero.

But here is another incident. A track-walker approached a trestle just as two workmen started across. He stopped them and told them who he was.

"Didn't you read that sign about trespassing?" he asked.

They nodded.

"We were in a big hurry," said one of them. "The trestle is a short cut for us." His last words were almost drowned as an extra freight thundered past and he paled.

"You'd been pretty busy out on the trestle now," said the track-walker. He saw that they realized this and were impressed, and so he followed up the advantage by giving a few facts about the danger of trespassing and telling of the great number of people who had no business on railroad property killed every year.

Both men thanked the railroad man.

"Furthermore," said one of them, "I happen to be foreman over at the mill and I'm going to put up a sign warning the men." He did as he promised. He told his men what the track-walker had told him, and they, too, were impressed.

The incident was not recorded in headlines. The track-walker was not hailed as a hero. But nevertheless he was a hero, for in the performance of what he saw was his duty he prevented the workmen of the mill from imperiling their lives daily. No one will ever know just what results he accomplished in preventing what might have been, and he did not have to risk his own life in doing so.

There are numerous opportunities every day for the individual railroad man to help in this educative campaign. The person who stands too near the edge of the station platform, the one who wants to jump off a moving car, the woman who gets excited at the approach of her train, the factory worker or school child seeking a short cut through railroad property—these and countless others need your attention. Their own carelessness or thoughtlessness may cause their death or injury any moment. A word from you will save them.

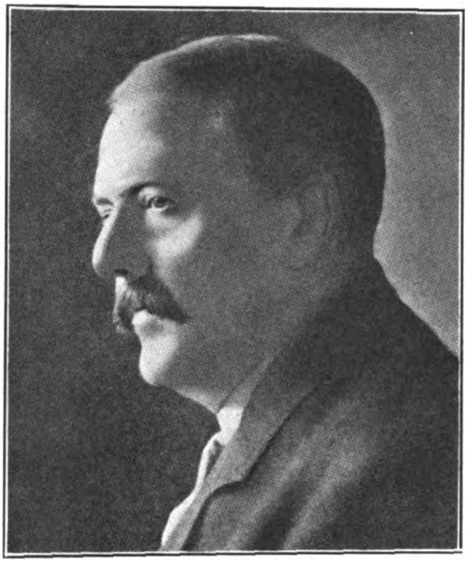
Personal

George M. Henry.

GEORGE M. HENRY, who has been appointed general passenger agent of the Detroit, Toledo and Ironton Railroad, with headquarters at Detroit, Michigan, was born September 3, 1876, at Toledo, Ohio. He began railway work in May, 1893, with the Wheeling & Lake Erie at Toledo, and was successively clerk and chief clerk in the passenger department until 1898, when he went to the Detroit & Lima Northern at Detroit, Mich., as chief clerk in the passenger department. From 1900 to 1902 he was general freight and passenger agent of the Rapid Railway, an electric line, and the following two years was general passenger agent of the Detroit Southern. He was then engaged in the coal business at Detroit for one year, returning to railway service in 1905 as general freight and passenger agent of the Detroit, Monroe & Toledo. For three years from 1906 he was in the advertising business, taking up railway work again in 1909 as chief clerk in the passenger department of the Ohio Electric Railway at Springfield, Ohio. Mr. Henry became connected with the Detroit, Toledo & Ironton in 1910 as assistant general passenger agent.

J. A. D. Vickers.

J. A. D. VICKERS, who, since the election of George C. Taylor to the presidency, has been acting vice-president and general manager of the Western Lines of the American Express Company, headquarters at Chicago, was elected vice-president and general manager September 28th. Mr. Vickers entered the express business in Canada under his father, who was the founder of Vickers' Express Company, becoming its superintendent in 1882. Upon the absorption of Vickers' Express by the American Express Company in 1889, Mr. Vickers became superintendent of the Canada Division of the American Express Company, and in 1891

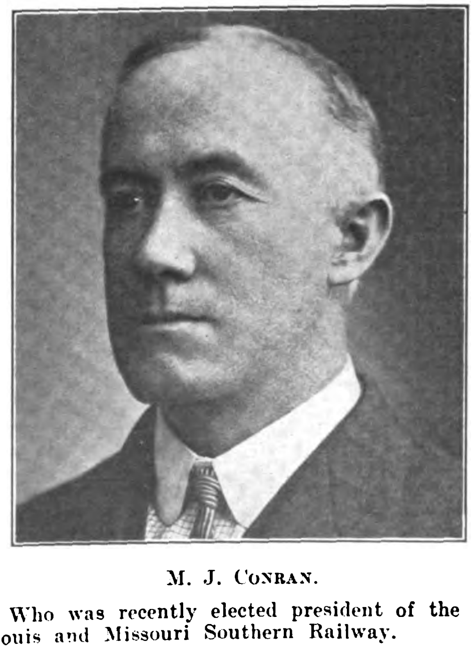


J. A. D. VICKERS.

was made superintendent of the National Express Company's lines in the West, with headquarters in Chicago; later promoted to general superintendent and again to general manager.

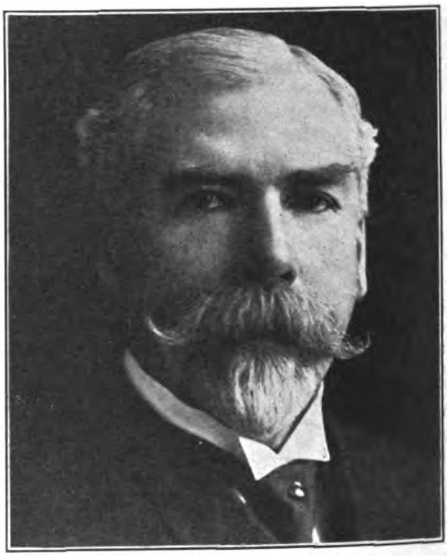
T. J. Kennedy.

T. J. KENNEDY, who has been elected president of the Algoma Central and Hudson Bay Railroad Company, with headquarters at Sault Ste. Marie, Ont., was born at Campbellford, Ont. He entered railway service in 1874 on the engineering staff of the Canadian Pacific Railroad and in 1881, became engineer for contractors of Section B of this road; in 1885, he was made roadmaster of the Lake Superior Division and in 1892, superintendent of the Chapeau Division. In 1899, Mr. Kennedy was transferred to the North Bay Division, from which position he left the service of the Canadian Pacific to become general superintendent and traffic manager of the Algoma Central and Hudson Bay Railway and the Algoma Eastern Railway. From 1900 to 1911, he was manager of the International Transit Company and of the Trans St. Mary Traction Company and in 1911, he became president of the Superior Construction Company, with headquarters at Sudbury, continuing in this position until October 1, 1914. Mr. Kennedy is also president of the Algoma Eastern Railway, the Algoma Central Terminals, the Algoma Eastern Terminals, the Superior Rolling Stock Company, the British America Express Company and is vice-president of the International Transit Company and of the Trans St. Mary Traction Company.



M. J. CONRAN.

Who was recently elected president of the St. Louis and Missouri Southern Railway.



T. J. KENNEDY.

Edward J. White.

EDWARD J. WHITE, who has been appointed general solicitor of the Missouri Pacific and the St. Louis, Iron Mountain and Southern, was born February 11, 1869, at St. Louis, Mo. He attended public school at Springfield, Mo., and Joplin later; from 1883 to 1885, was a student at the University of Arkansas, Fayetteville, Ark., and in 1888 entered the University of Missouri at Columbia, Mo., graduating in 1891. He was admitted to the bar that year and commenced the practice of law at Aurora, Mo. He entered railway service in 1903 as assistant attorney for the Missouri Pacific, with jurisdiction over counties in southwestern Missouri, retaining his headquarters at Aurora. In April, 1911, he was appointed general attorney, with office at Kansas City, with jurisdiction over Jackson County, Missouri. Mr. White held the latter position at the time of his recent promotion. In 1913, Mr. White was also elected president of the Missouri Bar Association, his term having just expired. He is the author of

Edward J. White.

a number of well known books, including the following: "Mines and Mining Remedies"; "Personal Injuries in Mines"; "Personal Injuries on Railroads"; "Legal Antiquities"; "Law in Shakespeare."

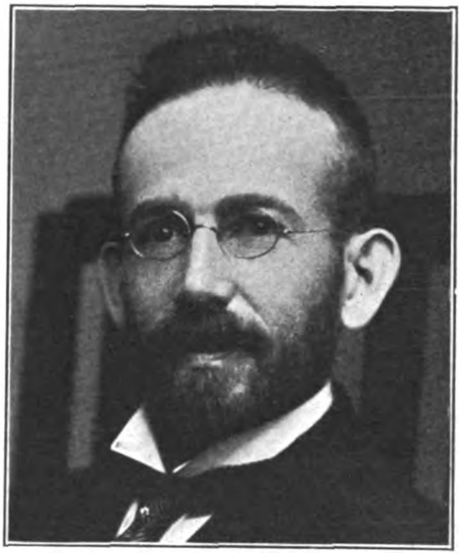
S. G. Lutz.

S. G. LUTZ, whose appointment as general traffic manager of the Chicago and Alton Railroad was announced in the August issue of the "Railway World," was born December 8, 1868, in Illinois and was graduated from Western College, Toledo, Ohio, in 1887. He began railway work in November, 1890, as a stenographer in the traffic department of the Iowa Central, and subsequently filled various clerical positions until September, 1894, when he became chief clerk in the freight traffic department. From January, 1898, to April, 1904, he was assistant general freight agent of that road, and was then until December, 1908, assistant general freight agent of the Minneapolis & St. Louis. He was freight traffic manager of both roads from December, 1908, to December, 1909, when he was appointed general freight agent of those roads and the Chicago & Alton and the Toledo, St. Louis & Western at Chicago. In November, 1910, Mr. Lutz was made traffic manager of the Minneapolis & St. Louis, which absorbed the Iowa Central, which position he resigned on August 1st, to become general traffic manager of the Chicago & Alton, with headquarters at Chicago, Ill.

S. G. Lutz.

Herbert L. Utter.

HERBERT L. UTTER, who has been elected secretary and treasurer of the Missouri Pacific, with headquarters at New York, was born on May 1, 1868, at Morrisville, N. Y. He was a student at Wayland Academy, Beaverdam, Wis., until 1886, and later was graduated from the Canandaigua (N. Y.) High School, and from Eastman's Business College, Poughkeepsie, N. Y. On April 4, 1891, Mr. Utter entered the service of the Missouri Pacific, and has been in the continuous service of that road ever since. In 1908, he was appointed assistant secretary and assistant treasurer, which position he held at the time of his recent election as secretary and treasurer of the same road as above noted.



H. L. Utter.

B. M. Waldron.

B. M. WALDRON, who has recently been appointed freight claim agent of the Baltimore and Ohio Railroad, was born February 26, 1871, in Richmond, Va. Entering the service of the local freight office of the Chesapeake and Ohio Railway September 12, 1889, he acted in various capacities of messenger, billing clerk and revising clerk, until February 9, 1893, when he took a position in the freight claim department, being advanced to loss and damage claim investigator June 1, 1896. On the latter date he was promoted to overcharge and relief claim investigator and on January 1, 1898, was made loss and damage claim investigator in charge of the over, short and damage department. On April 2, 1900, Mr. Waldron became chief clerk of the loss and damage department and on August 1, 1903, was transferred to chief clerk of the freight claim department.

Leaving the Chesapeake and Ohio Line in January, 1907, Mr. Waldron became identified with the Seaboard Air Line Railway at Portsmouth, Va., as freight claim agent, and went with the Pere Marquette Railroad in August of the following year as chief clerk in the freight claim department, at Detroit, Mich. On September 1, 1908, he became chief clerk of the freight claim department of the Cincinnati, Hamilton and Dayton Railway, at Cincinnati, being advanced to freight claim agent of that road in February, 1909, from which post he went to the Baltimore and Ohio as the head of its freight claim department.

B. M. Waldron.

Obituary

Thomas E. Adams, superintendent of motive power of the St. Louis Southwestern Railway, with headquarters at Pine Bluff, Ark., died at his home in that city on August 25th at the age of 63 years. Mr. Adams entered railway service in 1865 as a fireman on the Illinois Central R. R. He was consecutively locomotive engineer on that road, the Illinois Midland, the St. Paul, Minneapolis & Manitoba and the Great Northern railways from November, 1870, to February, 1893, when he was appointed division master mechanic on the Great Northern Railway. Three years later he became superintendent of the Dakota Division of that road, and from February, 1897, to April, 1901, he was successively master mechanic of the Fergus Falls Division and at Superior, Wis. He then became general master mechanic of St. Louis Southwestern and in July, 1905, was promoted to superintendent of motive power.

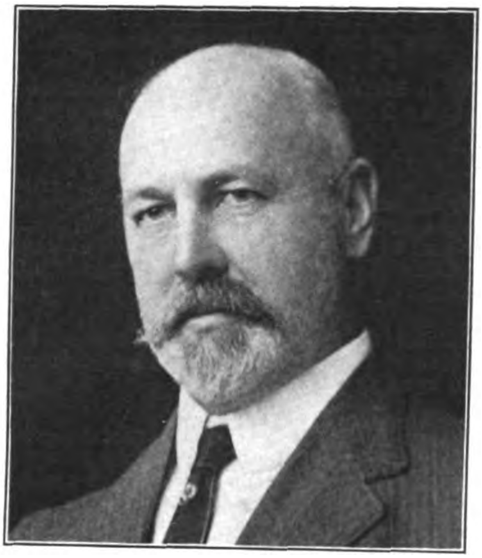
L. S. Brown, general agent of the Southern Railway at Washington, D. C., died in that city September 11th. He was born at Covington, Ga., in 1849.

Amos Howard Calef, secretary and treasurer of the Missouri Pacific, with office at New York, died on September 16th, at his summer home at Seabright, N. J., at the age of 71. The cause of his death was acute indigestion and heart disease. Mr. Calef was for many years closely associated with the Gould Railroad interests. Mr. Calef was born in Gloucester, Mass., and began railroad work as a clerk. He was with the Kansas Pacific and the Denver Pacific, now a part of the Union Pacific System. In 1880 he went to New York as secretary and treasurer of the Missouri Pacific System.

Frank W. Chaffee, general car inspector of the New York Central & Hudson River, with headquarters at Albany, N. Y., died on September 15th. He was born on December 17, 1850, at Springfield, Mass., and began railway work in 1868, as car repairer on the Connecticut River Railroad, now a part of the Boston & Maine. From September, 1870, to December, 1872, he was with the Wason Car Manufacturing Company, and then to June, 1881, was in the car building department of the Boston & Albany. He was then for three years in the service of the Baltimore & Ohio at Camden Station, Baltimore, and on June 1, 1884, left that company to go to the New York Central & Hudson River as general foreman of West Albany, N. Y., shops. He remained in that position until March, 1895, when he was promoted to master car builder of the same shops, and since February 1, 1901, Mr. Chaffee was general car inspector of the same road.

William S. Crane, formerly car accountant of the Missouri Pacific at St. Louis, Mo., died on September 20th, at his home in that city.

E. B. Gilbert, formerly superintendent of motive power of the Bessemer & Lake Erie, died at his home in Greenville, Pa., on September 7th. Mr. Gilbert was born at Windsor, N. Y., on December 13th, 1843. He took up the trade of machinist and later was employed on the Erie Railroad, both at Youngstown, Ohio, and at Galion, in the latter place holding the position of foreman. He went to Greenville about 28 years ago, and entered the service of the Pittsburgh, Shenango & Lake Erie, now the Bessemer & Lake Erie. He was promoted from machinist foreman to master mechanic, and later to superintendent of motive power, which position he held until his resignation in 1909.



Edwin A. Gordon.

Edwin Averill Gordon, for many years a prominent New England railway man, died August 30, 1914, at his home in Newton Centre, Mass. Mr. Gordon was born April 16, 1860, at Norwich, Vt., and entered railroad service in 1877 as freight clerk for the Providence and Worcester R. R. at Woonsocket, R. I. In 1880 he went to Boston as clerk in the local freight office of the New York and New England Railroad, remaining there until 1882. From 1882 until 1890, he was agent of the same road at Fishkill-on-Hudson and Newburgh, New York. From 1890 to 1892 he was traveling freight agent for the New York and New England Railroad with headquarters at Rochester, New York. In 1892, Mr. Gordon was appointed manager of the R. I. Car Service Association; in 1893 the Connecticut Car Service Association was added and in 1894 he also assumed the management of the Massachusetts and New Hampshire Car Service Associations.

He held these positions until 1898 when the American Woolen Company was formed, for which company he became traffic manager, holding the position until his death.

Mr. Gordon was a member of the Society of Colonial Wars; the New England Historical & Genealogical Society; the Economic Club of Boston; the Boston Chamber of Commerce; Honorary Member of the National Association of Car Service Managers and American Association of Local Freight Agents' Associations.

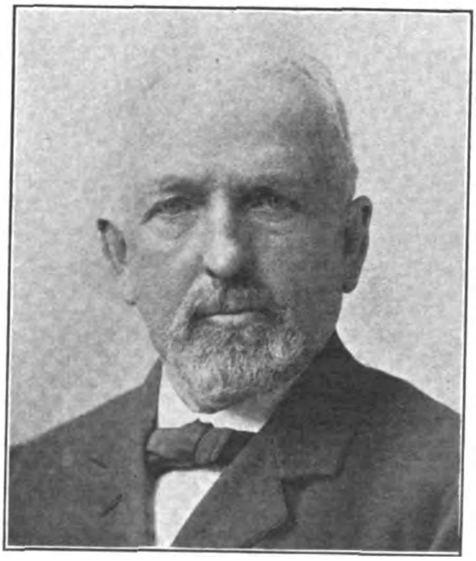
He is survived by his widow, Jennie R. Gordon, a daughter, Grace R. Gordon, and son, Harold Norris Gordon.

J. D. M. Hamilton, claims attorney of the Atchison, Topeka and Santa Fe, with headquarters at Topeka, Kan., died at a hospital in Kansas City on September 20th. He was born on July 18, 1851, at Pittsburgh, Pa., and was educated at Knox College and at the St. Louis Law School. From 1879 to 1898, he was local attorney for the Chicago, Burlington and Quincy at Fort Madison, Iowa and was for a time mayor of the city. From 1881 to 1890 he was also attorney for the Fort Madison & Northwestern. He entered the service of the Santa Fe System as assistant attorney and in June, 1898, was made claims attorney. He has been a leader in the safety first movement.

John G. Haun, supervisor of bridges and buildings of the Virginia and Southwestern, with headquarters at Bristol, Tenn., was killed in an accident on that road on September 14th. A motor car in which he was traveling was derailed while crossing a trestle near Bluff City, causing death.

Marshall E. Johns, superintendent of terminals of the New York, Susquehanna and Western and the Wilkes-Barre & Eastern, with office at Jersey City, N. J., died on September 30th, at his home in Paterson, N. J. He was born on April 17, 1860, at Washington, D. C., and was educated in the public schools of New York City. He began railway work in July, 1876, as a brakeman, and was later train baggage master and conductor on the Montclair & Greenwood Lake, now a part of the Erie. In July, 1880, he went to the New Jersey Midland, now the New York, Susquehanna & Western, as brakeman, and was then consecutively to September, 1894, freight conductor, passenger conductor and yardmaster. During the following ten years he was train master on the Wilkes-Barre & Eastern. In September, 1904, he was appointed superintendent of the New York, Susquehanna & Western and the Wilkes-Barre & Eastern, which form a part of the Erie System, and on January 1, 1914, was appointed superintendent of terminals of the same roads.

William Stewart, formerly from 1892 to 1897, freight traffic manager of the Pennsylvania Lines West of Pittsburgh, at Pittsburgh, Pa., died on October 3rd. He was born in July, 1833, in Ireland, and began railway work in May, 1852, as a clerk in the freight and passenger office of



William Stewart.

the Cleveland & Pittsburgh at Pittsburgh, and his entire service was with that and other lines now included in the Pennsylvania Lines West of Pittsburgh. From 1858, to 1864, he was agent of the same road and the Pittsburgh, Columbus & Cincinnati; he was then for four years general freight agent of the Pittsburgh and Cleveland, and during the following three years was superintendent and general freight agent of the same road. From 1871 to 1892, he was general freight agent of the Pennsylvania Company and the Pittsburgh, Cincinnati & St. Louis, and then to April, 1897, was freight traffic manager of the Pennsylvania Lines West of Pittsburgh.

Barney F. Keefe, general agent of the Chesapeake & Ohio, with office at Covington, Ky., died on September 6th at Toledo, Ohio.

J. P. McCuen, formerly superintendent of motive power of the Queen & Crescent Route, died at his home in Avondale, Cincinnati, Ohio, on October 2nd, aged 70 years. He was connected with the mechanical department of that system for thirty years, retiring three years ago.

M. J. McDonough, commercial agent of the St. Louis & San Francisco R. R. at Birmingham, Ala., met death in the recent train wreck near Livingston, Ala.

N. M. Markley, for many years supervisor of bridges and buildings of the Peoria & Eastern Division of the Cleveland, Cincinnati, Chicago & St. Louis, died at his home in Arcanum, Ohio, September 5th, aged 67 years.

Charles A. Pettibone, general agent of the Wabash at Portland, Oregon, died on September 16th, aged 53 years.

George L. Rhodes, formerly assistant general passenger agent of the Chicago, Rock Island and Pacific, died on September 23rd, at his residence in Chicago, aged 65 years.

Financial

Improvements in Financial Situation.

A CONSIDERABLE improvement has been noted in the general financial situation. Brokers have been largely able to clear up transactions pending prior to the declaration of war and new business has been strictly limited to purchases and sales at or above the closing prices of July 30th. The result is that restrictions in trading are being slowly modified and a fair volume of business being developed. Of the total amount of currency, amounting to $1,441,951,000, allowed to be issued under the Aldrich-Vreeland Act, but $300,000 has been issued thus far, and at no time has there been any apparent danger of panic conditions.

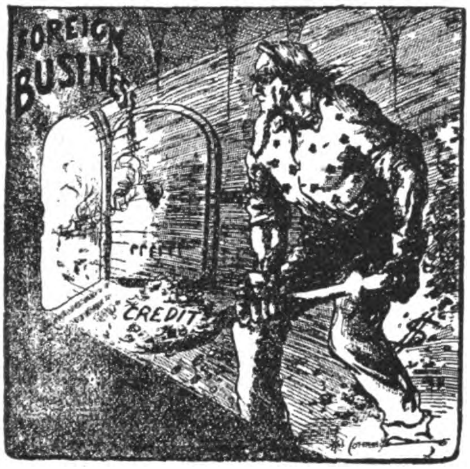
The great problem which confronts our money markets at the present time is, of course, that of placing the foreign exchange market again in a normal condition. The war caught the United States heavily indebted to Europe, due in a large part to the operations of the tariff causing an adverse balance of trade. Travelers' outlays, which are always largest in summer, together with interest payments and other financial obligations, have made this total of indebtedness very large. Our exports under ordinary conditions, particularly with regard to the foreign cotton movement, would have gone a long way towards offsetting this balance. Unfortunately, cotton exports at the present time have practically ceased and it is likely to be months before they are resumed in any fair volume. Gradual relief, however, is likely to be procured from two sources. In the first place, imports will be in small proportions for some time to come, while on the other hand, exports of food products now heavy, and expected to greatly increase, will prove an important factor in reducing our indebtedness.

One of the best signs of promise is the fact that for the latter half of September our exports at New York have been running ahead of the same weeks of last year, notwithstanding the heavy falling off in cotton and oil, two of the leading articles, the gain in food stuffs evidently more than balancing these losses. One of the notable items of the week ending September 9th was 104,000 barrels of flour to France. The following figures show exports at the port of New York, other ports not being available, each week since the war broke out:—

Week ended	1914	1913
September 26	20,032,132	16,810,536
September 19	17,208,199	14,561,782
September 12	13,906,351	15,393,386
September 5	12,210,989	14,866,148
August 29	10,214,302	12,158,997
August 22	8,477,361	15,797,498
August 15	10,723,082	14,834,851
August 8	12,071,056	13,515,717
August 1	14,670,910	16,343,572
July 25	14,177,223	14,144,568

Furthermore, the Federal Reserve Board, owing to the concerted action of banking interests at various large cities, is now in a position to supply up to $100,000,000 in gold which will be available for shipment to Europe or Canada, as may be required. It is estimated by financial authorities, however, that it will probably not be necessary to ship more than $25,000,000 of this amount, as the mere intention and ability of this country to settle its debts in gold is likely to have a beneficial effect upon the exchange market.

The question of our ability to procure a larger share of the South American trade, due to the temporary withdrawal of European competition on account of war influences, is largely a financial one. Strong banking affiliations have proved to be the backbone of Europe's commercial success in South America. By this means credit has been extended to South American merchants and extensive loans made to the purchasing country. Through habit, this method of doing business has become a custom and until



"FIRING UP"

—From The Pittsburgh Post.

similar banking relations have been established between the merchants of this country and those of South American countries, progress in the growth of our exports to this territory is likely to be disappointing. The present great disadvantage of our merchants, in endeavoring to break into South American markets, rests in the fact that they have no financial backing to speak of except their own resources and credit, and this backing is fully as necessary to control such trade, as is the quality or character of the merchandise offered. To quote from the monthly letter of the banking house of Spencer, Trask and Company of New York:

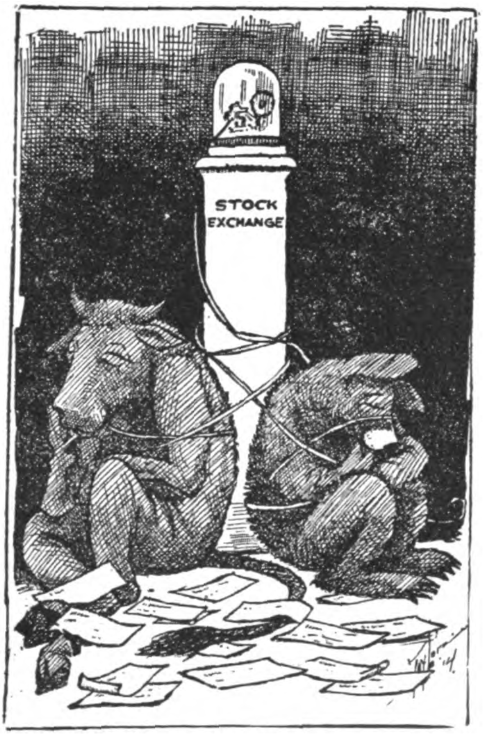
"Owing further to the fact that our expanding industries themselves still need every dollar we can spare, owing also to the fact that for sometime to come we may find it hard to obtain the capital from Europe on which we have hitherto been able to count, it is apparent that from a banking point of view we are not yet in a position where we can give any far-reaching help to our merchants in launching out into new fields, however desirable that might turn out to be for the future.

"The financing alone of our railroads promises to call for very considerable sums. The long expected decision of the Interstate Commerce Commission was published on August 1st, but owing to the seething condition of the markets at that time it was practically lost sight of by others than those immediately affected. The decision was considered of so little help, and the war produced so many further complications, that on September 9th, a committee of the Eastern Railroads called on President Wilson and laid before him their plea that unless rates were increased they saw themselves unable to finance even the most pressing needs of their roads. As this would have had the ultimate result of lengthening the list of railroads in the hands of receivers, Mr. Wilson let it be known that he appreciated the plight of the railroads, and it is no doubt due largely to this that the Interstate Commerce Commission has signified its intention to reopen the case on October 19th. It is also intended that the view point of the investor shall be considered this time—and by the investor we mean not only the one share man, but large financial institutions, savings banks, life insurance companies, etc., who are directly interested in railroad securities. If the investor's side, as well as the railroad's side of the case convinces the Interstate Commerce Commission that rates should be increased, then of this war, which has brought the situation to a head, it may be said that the ill wind it is so generally sowing has at least blown good to one of the most important industries of the country, as well as to a very large portion of our people."

Speaking of general business conditions, the monthly statement issued October 1st by the National City Bank of New York, asserts that:

"Banking conditions have improved during the month, confidence being greatly strengthened. The tension in the money market has eased. There have been comparatively few insolvencies of importance in trade, and the banks generally have been caring for the necessities of their customers with praiseworthy consideration.

"The bank clearings tell a story of diminishing exchanges. Those for New York City are, of course, affected by the closing of the Stock Exchange, although trading on the exchange was very light a year ago, but for the country outside of New York they are running about ten per cent below the same weeks last year. Railway traffic earnings are lower, although roads in the wheat territory make a good showing. The middle west is in excellent condition because of the high price farm products are commanding and its buying powers are certain to be a great supporting factor in the situation for the year to come. The South has a big cotton crop, which turns out to be rather a dubious blessing, but while the price is sure to be disappointing as compared with expectations a little more than



HIBERNATING

—From Los Angeles Times.

two months ago, it will surely pay a great many debts and buy a great many goods.

"Industry has not recovered from the first shock caused by the declaration of war and the effect upon banking conditions. Commercial paper became unsaleable, the houses relying upon it were obliged to curtail their operations, everything in the line of new constructive work that could be held up was suspended, and the same is true of machinery and plant equipment purchases. Buying of all kinds has been curtailed as much as possible. The result naturally has been a considerable curtailment of employment. The iron and steel industry is working at about 60 per cent of capacity. New foreign business so far has not made good losses at home. Operations in the oil fields have been restricted. The copper mines are working on about one-half time, but other mining operations have not been very seriously affected. The woolen industry, which was depressed because of tariff reductions, has improved, war conditions having interfered with foreign competition. Full employment for the woolen and worsted mills is in prospect. New England cotton mills are running light on account of the unsettled cotton situation. Buyers of goods are holding off and mill operators are doing the same, waiting more definite knowledge as to what the price of cotton will be. Manufacturers claim that cotton goods are now below a ten cent price for cotton. Wool is affected by the same conditions that affect cotton, but not so seriously.

"The hosiery trade has not been good. In the past this country has exported certain lines of hosiery, silk almost exclusively, to England, Germany, Austria, France, Italy, South Africa and Australia, but this business is now practically cut off. The total consumption of hosiery in the United States amounts to about $80,000,000 to $90,000,000 and of this an average of from $4,000,000 to $5,000,000 has been imported. The manufacturers have looked forward to a notable increase in imports because of the low tariff, but this is being prevented by the war conditions.

"During the last half of September, buyers appeared in this market for European governments with large orders for army supplies and some important contracts have been made. The Italian government is authoritatively reported to be ready to expend $5,000,000 for shoes, knapsacks, saddles and clothing equipment. Heavy orders from other governments have also been taken for underwear, towels, army duck, blankets, etc. These are helping out the situation in spots materially, and giving a better tone all around. The market has been swept practically bare of these goods suitable for army use.

"The situation as regards new foreign trade develops very slowly. Important credits for the South American countries have been granted in New York, and some trade has been created in this manner. The growth of business with South America necessarily will be slow, because of the absolute shutting off of the supply of capital from European sources."

Referring particularly to the railway situation, Hambleton and Company of Baltimore, has the following to say in its financial circular of October 9th:

"Novel methods have been taken by the Government and by individuals to protect conditions brought about by the war, due to the fact that no adequate laws or machinery of law exists to remedy the peculiar circumstances. On the other hand, in the face of continually diminishing net earning reports of the railroads throughout the South and East, the Interstate Commerce Commission, which has the right and power to act immediately to relieve the situation, has not yet shown a sympathetic disposition to co-operate with our greatest industry, to protect its business or to conserve the value of its securities. The demand for capital during or after the war, (and the longer the war lasts the greater the demand will be), it is anticipated will be insistent and lenders will naturally obtain a return on their investments commensurate with the demand. A promise to pay, unsupported by demonstrated ability to pay, cannot compete with a security whose equity and earnings are proven. Our railroad issues hold an enviable position both here and abroad, but as earnings become impaired their attractiveness will be lessened. This is axiomatic, and the artificial restraints to trading will only postpone the day of declining values, unless the Interstate Commerce Commission grant, in the interim, an increase in freight rates sufficient to enable the roads to show an ability to earn, and pay a competitive return to their security holders. Unless such action is taken not only the stockholders will suffer, but the query at once becomes pertinent—How are the railroads to finance either their maturities or the necessary requirements for maintenance, betterments or additions? The question is a national one and public opinion, we believe, is in favor of granting the roads immediate and substantial relief."

The Widespread Effect of the War.

EACH section of the United States is at present suffering, to a greater or less extent, from the effects of the European war. As time progresses, these effects are likely to prove somewhat stimulating in the Western sections of the country, but will probably continue to exert a depressing effect in other sections.

The East, at the present time, is not only suffering from an extreme depression of finance but also from an interference with its manufacturing industries and foreign trade, the latter, however, has shown some signs of improvement recently and is expected to bring with it a consequent improvement in the former. There must, however, be a radical readjustment in manufacturing activities before any great or permanent improvement can be established.

The effect of the war in the South is also indissolubly associated with the dependence of the Southern people upon the cotton industry. The recent decreases in price, being unaccompanied as they were, by any reduction in the cost of production, have temporarily, at least, meant a great loss to the people of that section which, it is hoped, however, may be reasonably offset by future developments. While the loss is of course greatest in Texas, all other Southern States have been more or less affected.

The West is apparently the only section of the country which has yet to record any possible financial benefits from the war. Largely through its influence, it is estimated that the corn crop has increased in value about $350,000,000 and the wheat crop by approximately $300,000,000, to which may be added $200,000,000 for the appreciation of other grain crops. This should logically mean more business for the grain elevators, the flour mills, the dealers and the exporters. In fact, its effect should be felt even among dealers in general merchandise and, in this way, may extend well into the Eastern section of the country.

Discussing the general effect of the war upon the whole country, *Moody's Magazine* for October first has the following to say:

"As to the net effect of the war upon the business of the entire population of the United States, only the roughest estimates can be formed. These must be obtained from a study of the decrease in bank exchanges, since any study of the price movements of commodities and merchandise is so complicated and involved as to lead nowhere. So far as can be judged from the inadequate data the net personal earnings of the population of New York City are equivalent to something like three per cent of the yearly bank exchanges of the city. Out side of New York these net earnings seem to be equivalent to about 31 per cent of exchanges. The relation between net incomes and bank exchanges is loose and undependable, but it is the only guide we have.

"Upon this basis the fact that bank exchanges are running 41 per cent behind last year in New York and about 7.3 per cent behind outside of New York would indicate a loss of something like $2,800,000,000 annually in the net personal earnings of the entire population of this country. Meantime the total of such earnings when normal has been estimated at about $26,000,000,000. Here is a loss at the rate of more than 10 per cent indicated by the conditions prevailing at the end of September; but when the exchanges reopen and foreign commerce largely resumes, this rate of loss will doubtless be cut away down. Still the prospect that the United States will make a net profit out of the war may even now be said to have definitely disappeared."

Southern Development.

REPORTS of the railroads of the United States to the Interstate Commerce Commission for the year ended June 30, 1914, throw an interesting light on the development of the South during the year as compared with other parts of the country.

One of the best measures of the progress of a community is afforded by the gross operating revenues of its railroads. Measured by this standard, it will be seen that the South is the only section of the country that did a larger business during the fiscal year than in the last preceding twelve months.

In the Eastern District, north of the Ohio and Potomac Rivers and east of a line running from Chicago to St. Louis, thence down the Mississippi to the mouth of the Ohio, gross operating revenues for the year show a decrease of $960 per mile or 4.1 per cent. In the Western District, embracing all of the country west of the Chicago-St. Louis line and west of the Mississippi River, there was a decrease of $440 per mile or 4.3 per cent. In the Southern District, embracing the territory south of the Ohio and Potomac Rivers and east of the Mississippi River, there was an increase of $215 per mile or two per cent.

These figures show that the falling off in business in all other parts of the United States during the fiscal year did not limit Southern development as a whole but that, while some lines of business may have been affected by the falling oft in demand in other parts of the country, there was a substantial growth in the business of the South as a whole.

An interesting fact brought out by the reports to the Interstate Commerce Commission is that the railroads of the South did not share in full measure in the prosperity of the section. While their gross operating revenues increased at the rate of $215 per mile, the increase in operating expenses and taxes was so great as not only to absorb the total increase in gross operating revenues but to make an actual reduction in operating income of $85 per mile or 3.2 per cent.

Railway Financial Results for July as Reported by the Bureau of Railway Economics.

THE report of the Bureau of Railway Economics at Washington, on the revenues and expenses of steam roads in the United States during the month of July, shows in brief, that railway operating income for the month, reduced to a per mile of line basis, and compared with that for July, 1913, registered a decrease of $9.00, or 3.1 per cent, as compared with similar results for July, 1913, while total operating revenue per mile for July of the current year, decreased 5 per cent as compared with the same month of 1913. Operating expenses per mile also decreased 6.2 per cent, while net operating revenue per mile decreased 2.1 per cent. The total operating revenue for the month amoutned to $256,404,337. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail and auxiliary operations. Compared with July, 1913, these operating revenues show a decrease of $10,476,467. Total operating revenues per mile averaged $1,124 in July, 1914, and $1,183 in July, 1913, a decrease of $59, or 5.0 per cent.

Operating expenses, which include all the costs of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $178,988,195. This was $9,645,172 less than for July, 1913. These operating expenses per mile of line averaged $785 in July, 1914, and $836 in July, 1913, a decrease of $52 per mile, or 6.2 per cent.

Net operating revenue, that is, total operating revenues of rail and auxiliary operations less operating expenses, amounted to $77,416,142, which was $831,295 less than for July, 1913. Net operating revenue per mile of line averaged $339 in July, 1914, and $346 in July, 1913, a decrease of $7 per mile, or 2.1 per cent.

Taxes for the month of July amounted to $11,387,392, or $50 per mile, an increase of 3.8 per cent over July, 1913.

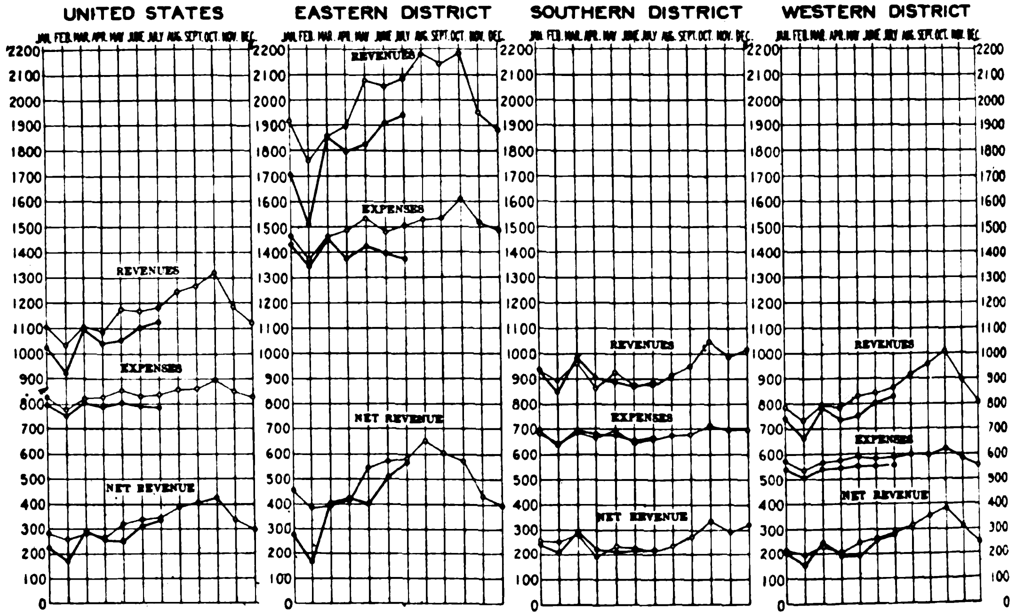
Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $289 per mile of line, and in July, 1913, $298, thus decreasing $9, or 3.1 per cent. Operating income for each mile of line for each day in July averaged 9.33 and in July, 1913, $9.63.

Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1 000 000

CALENDAR YEAR:
1913 •
1914 •



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

Railway Net Earnings for August.

DURING August, according to the latest figures published by the *Commercial and Financial Chronicle*, the gross receipts of American railways were $87,772,384, as against $87,300,840 for the corresponding month in 1913. This result was obtained in spite of the fact of over an $11,000,000 decrease in gross. While these results show that the efforts of extreme economy were successful in overcoming the shrinkage in gross revenues, they are of course extremely unsatisfactory in view of the fact that a considerable improvement in net earnings is required each year in order that the railways shall merely hold their own. Another fact to be borne in mind is that the comparison is with unusually poor returns for the corresponding month of last year, as that month showed a shrinkage of over $9,000,000 as compared with August of 1912. The following compilation prepared by the *Chronicle* gives the net earnings for August for a series of years:

	Net Earnings.		
Year. August.	Year Given.	Year Preceding.	Inc. (+) or Dec. (—)
1896	$17,418,959	$19,023,398	—$1,604,439
1897	24,228,620	19,592,169	+4,636,451
1898	27,942,601	28,189,822	—247,221
1899	29,730,968	25,200,009	+4,530,959
1900	33,216,118	31,032,360	+2,183,758
1901	40,548,771	34,210,061	+6,338,710
1902	35,928,409	37,776,146	—1,847,737
1903	41,282,319	35,747,474	+5,534,845
1904	43,168,250	40,913,469	+2,254,781
1905	43,201,744	40,480,712	+2,721,032
1906	48,074,911	42,719,768	+5,355,143
1907	45,629,104	44,849,985	+799,119
1908	75,028,707	84,251,096	—9,222,389
1909	90,384,539	75,319,538	+15,065,001
1910	89,517,074	90,176,937	—659,863
1911	86,224,971	86,820,040	—595,069
1912	99,143,971	87,718,505	+11,425,466
1913	83,143,024	92,249,194	—9,106,170
1914	87,772,384	87,300,840	+471,544

In discussing the results for separate roads, the *Chronicle* has the following to say:

"In the gross the losses decidedly predominate, though there are a few roads distinguished for gains. In the net, increases and decreases are pretty nearly evenly balanced. It deserves to be noted that the fact that the saving in expenses in the general totals overtops the loss in gross is due mainly to the rigid cutting down of expenses by a few prominent companies. Thus the Pennsylvania Railroad, through a paring down of the expense account, has converted a loss of $1,294,706 in gross into a gain of $399,020 in net, and the New York Central has changed a loss of $854,437 in gross into $230,648 gain in net. This last is for the Central proper. Including the various auxiliary and controlled roads, the whole going to form the New York Central *System*, the result is yet more striking, the loss in the gross in that way reaching $2,063,363, with $1,094,758 gain in net.

"Some of the Western systems have distinguished themselves in much the same way. Thus the Great Northern Railway, with $197,413 loss in gross, has $702,895 gain in net. The Southern Pacific, with $560,999 loss in gross, has $532,318 loss in net. The Atchison is able to show $669,366 gain in gross and has succeeded in carrying forward $632,408 of this to the net. The Union Pacific, while having added only $26,526 to gross, has increased this to $189,656 in the net through reduced expenses. The

Milwaukee and St. Paul, with $116,565 increase in gross, has $295,035 increase in net. The St. Paul and Omaha, with $154,101 gain in gross, has $229,751 gain in net. The Illinois Central, with $148,229 gain in gross, has $284,348 gain in net.

"On the other hand, there are quite a number of instances where the results as to net are more unfavorable than those as to the gross, and still a few other cases where a large loss in gross has been attended by a considerable paring down of expenses, but not sufficient to wipe out entirely the shrinkage in the gross. The Baltimore and Ohio is of this latter type, it reporting $921,106 decrease in gross, but only $232,275 decrease in net. Among the New England roads, the Boston and Maine has $271,997 decrease in gross, with $324,332 decrease in net, and the New York, New Haven and Hartford $411,378 decrease in gross with $242,927 decrease in net. In the South the Southern Railway furnishes an instance of decreased gross attended by increased expenses; it reports $69,137 decrease in gross with $280,573 decrease in net. The Northern Pacific has $145,548 loss in gross but only $30,290 loss in net; the St. Louis and San Francisco has $358,314 loss in gross and only $154,068 loss in net, and the Missouri Pacific has turned $160,561 loss in gross into $71,252 gain in net. The Rock Island, like the Atchison, has a gain in both gross and net—$287,259 in the former and $142,693 in the latter. In the following we show all changes for the separate roads for amounts in excess of $100,000, whether increases or decreases, and in both gross and net."

Railway Gross Earnings for September.

ACCORDING to the latest statistical compilations of the *Commercial and Financial Chronicle*, gross earnings of United States railroads are falling off in all directions. The situation was bad enough before the outbreak of the war but since then has developed in one of unparalleled seriousness. Even a larger grain movement has failed to prevent a loss in the case of the Western roads, while a large shrinkage in the cotton traffic only helped to make a bad situation worse in the South. Canadian roads have also felt the depression. The *Chronicle's* preliminary statement of gross earnings for September covers 91,124 miles on which there is reported a loss in gross earnings of $5,747,837, or 7.05 per cent. Out of the whole 43 roads included in the table, there are only nine that are able to record an increase. The Chesapeake and Ohio, which is steadily forging ahead, is one of these. The Mineral Range, though a very small road, has a substantial amount of increase, because comparison is with the strike period in the copper mining regions of Lake Superior last year. The "Soo" road and the Minneapolis and St. Louis also have increases and are doubtless benefited by the large movement of spring wheat induced by the high price prevailing for wheat. The Canadian Northern is the one large Canadain system able to record an increase. In the following we show all changes for the separate roads for an amount in excess of $30,000, whether increases or decreases. The list of decreases, it is observed, is a long one.

PRINCIPAL CHANGES IN GROSS EARNINGS IN SEPTEMBER.

	Increases.
Chesapeake and Ohio	$242,615
Canadian Northern	115,000
Minneapolis and St. Louis	65,197
Minneapolis, St. Paul and S. Ste Marie	36,408
Mineral Range	35,452
Representing 5 roads in our compilation	$494,672

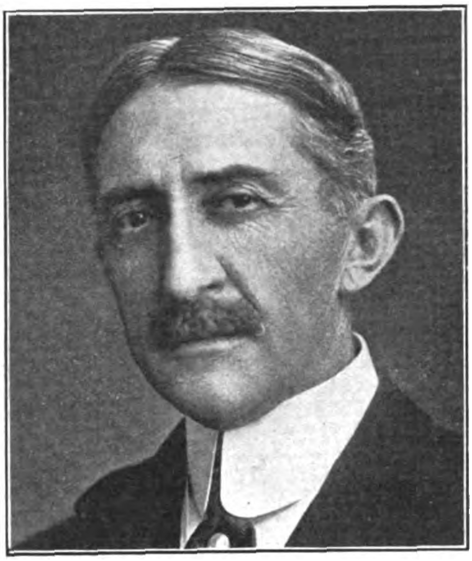
	Decreases.
Canadian Pacific	$1,408,000
Louisville and Nashville	683,141
Great Northern	669,594
Southern Railway	460,362
Seaboard Air Line	364,369
Illinois Central	321,631
St. Louis Southwestern	239,000
Missouri, Kansas and Texas	209,598
Grand Trunk	199,080
Buffalo, Rochester and Pittsburgh	191,448
Missouri Pacific	190,000
Yazoo and Mississippi Valley	178,714
Colorado and Southern	154,521
Wabash	139,786
Mobile and Ohio	133,976
Chicago and Alton	132,333
Cincinnati, N. Oleans and Texas Pacific	129,060
Denver and Rio Grande	128,400
Texas and Pacific	108,941
Chicago Great Western	49,926
Western Pacific	40,200
Duluth, South Shore and Atlantic	38,662
Chicago, Indianapolis and Louisville	37,742
Alabama Great Southern	36,268
Representing 24 roads in our compilation	$6,203,752

Southern Railway Elects New Members to Board of Directors.

MR. EDWIN A. ALDERMAN, president of the University of Virginia; John Kerr Branch, banker of Richmond; Dr. John C. Kilgo, of Durham, N. C., Bishop of the Methodist Episcopal Church, South; Robert Jemison, of Birmingham, Ala., and Charles Steele, of New York, were recently elected directors of Southern Railway Company, thus making a majority of the board Southern men and fulfilling the hope expressed by President Fairfax Harrison in his first address before a Southern audience when at Chattanooga on January 20, he said: "I look forward to the time when there may be more Southern men sitting on our board of directors."

Mr. Steele succeeds himself, the four new directors filling vacancies caused by the death of Messrs. W. W. Finley and H. C. Fahnstock, the resignation of Mr. George F. Baker, Jr., of New York, and the declination of Judge E. H. Gary, of New York, to accept re-election. Judge Gary, who is chairman of the board of the United States Steel Corporation, and Mr. Baker, who is allied with a number of other corporations, are retiring from the board of directors of Southern Railway largely in deference to public opinion of the present day in regard to interlocking directorates, despite the fact that both have been active and useful members of the Southern board.

The meeting of the stockholders on October 13th, was the first at which they have had the opportunity to directly take a hand in the management of its affairs and the election of directors, the voting trust which has been in control since the organization of the company in 1894 now being in process of dissolution.



EDWIN A. ALDERMAN.

President of the University of Virginia, who has been elected to the Board of Directorship of the Southern Railway.

A large number of stockholders attended the meeting in person and over 90 per cent of the total capitalization was represented. The meeting was open to the public and there was full and frank discussion of the report covering the operations of the company for the fiscal year ending June 30, and of the recently accomplished financing before approval was voted. A number of the directors and the principal officers were in attendance and answered questions asked by stockholders touching the management of the property and gave all information requested in regard to the affairs of the company and the progress of the territory which it serves.

ROBERT JEMISON OF BIRMINGHAM, ALA.

Who has been elected to the Board of Directorship of the Southern Railway.

Northern Central Revises By-Laws.

THE board of directors of the Northern Central Railway Company has made the necessary revision in its by-laws and organization to accord with the conditions under which its railroad is operated by the Pennsylvania Railroad Company under the lease. The vice-presidents, who occupied similar positions with the Pennsylvania Railroad Company, in charge of operating, traffic, financial, real estate and other departments, retired, because they will hereafter perform these duties for the lessee company. Mr. Samuel Rea continues as president, Mr. Michael Jenkins, of Baltimore, and Mr. A. J. County, who performs similar duties for other leased lines in the Pennsylvania System, were elected vice-presidents.

Baltimore and Ohio Plans Issue of General Refunding and Improvement Mortgage.

IN connection with the call for the annual meeting of the stockholders of the Baltimore and Ohio Railroad, which will be held November 16th, it is announced that at that time a plan will be considered for issuing a general refunding and improvement mortgage, and President Daniel Willard gives a brief explanation of the scope and purpose of this mortgage in a communication which is being mailed to the stockholders.

While the amount of the bonds which will be issued under the mortgage is placed at $600,000,000, unless the stockholders should later give further consent to an additional issue, it does not necessarily follow that there will be any large increase in the mortgage issues of the Baltimore and Ohio Railroad, but after providing for the refunding of the existing obligations of the company it makes provision for bonds which will be available for future years for additions and betterments to the property.

From the notice it is evident that the plan of the proposed refunding and improvement mortgage follows the general character of mortgages recently issued by the New York Central System, the Chicago, Milwaukee and St. Paul and the Northern Pacific Railroads.

Erie Railroad to Issue Car Trust Certificates.

THE Erie Railroad has applied to the up-State Public Service Commission for approval of a $900,000 car trust equipment, which George H. Minor, assistant general solicitor of the Erie characterizes as one of the most favorable the road has ever been able to project, despite the disturbed condition of the financial market due to the European conflict.

The certificates, to be known as Series BB, will bear interest at four and one-half per cent, and Mr. Minor announced that Drexel & Co., of Philadelphia, have offered to purchase the entire issue for 97 and accrued interest. These favorable terms, Mr. Minor explained at the hearing, were due to the fact that the arrangements for the issue had been made early in the summer before the war scare. The actual issue has been postponed to this time on account of certain changes in the specifications for the equipment to be bought.

The Commission's Advance Rate Decision as Viewed By an English Railway Expert

NOTE: The following statement appears in the *New York Annalist* of October 5th, and represents a response made by Mr. W. M. Acworth, the noted English economist to a request for an opinion on the Commission's decision in the so-called Eastern rate advance case. While Mr. Acworth's reply was delayed, on account of the war, the fact that the Commission has again taken this whole matter under consideration, makes his remarks of a timely character.

I AM asked to say how the recent decision of the Interstate Commerce Commission in the rates advance case strikes an Englishman who for twenty-five years has been a close student of American railway matters.

The first thing that strikes me is that the Commission is a mighty poor hand at prophecy. "Shortly after the commencement of this proceeding," says the decision, "there began another period of depression from which we appear now to be recovering." The decision was given on July 29. On July 30 the Stock Exchanges in New York and London closed for an indefinite period; the next day the London Bank rate went up to 8 per cent; the following day to 10 per cent; the day after Germany declared war on France and Russia, and violated the neutrality of Belgium.

During the argument of the case the carriers pleaded that "they would encounter great difficulty in renewing their maturing short-term notes and other obligations." "Subsequent developments have," says the Commission, "shown that there was little evidence for any such view * * * * with the growing ease in the money markets this difficulty has largely disappeared." I have not heard of any short-term notes that have been renewed in Europe since July 29; nor do I imagine that the bankers in New York are tumbling over one another in their desire to renew them at home.

One would have thought that the Commission would have appreciated, after the failure of their prognostications in 1911, the danger of prophecy. In their decision of the rate advance cases in that year the then Commission prophesied, "The cost of supplies will not much advance. Wages will not much increase." To-day the Commission says, "The most important items (in transportation expenses) are the cost of fuel, and the wages of employes. * * * * The average price of coal increased 7.7 per cent from 1910 to 1913. * * * * Exhibits filed in this proceeding indicate an increase of 9.02 per cent in the average daily wages paid in 1913 as compared with 1909, and that if the scale of wages for 1909 had been in effect during 1913 the labor costs of the latter year would have been less by about $51,000,000 than they actually were." The maximum increase of rates asked for by the carriers was not more than $50,000,000; less, therefore, than the increased cost of operation due to wages alone in the single department of transportation.

Another thing that strikes me of a general nature is that the Commission do well to describe themselves as exercising quasi judicial functions. It is a maxim of the common law that in judicial proceedings every man is innocent till he is proved guilty. The whole of the decision of the Commission seems to me to be permeated and saturated with a quasi judical spirit which assumes that every railway is guilty till it proves itself innocent.

Let me at once say that I make no imputation of intentional unfairness against the majority of the Commission. It would be an impertinence to me to testify either to their competence or to their integrity. But I cannot help regarding their subconscious attitude as one more proof of the anti-railroad bias—based on and no doubt largely justified by historical causes—that normally characterizes in my judgment American legislators and American commissions.

This being the attitude of public authorities, it would be comic, were it not so serious, to note how the Commission refers to the railroads for relief to other public authorities. For example, the Commission says, "We make no suggestion in regard to railway mail pay, as that subject is under investigation by another branch of the Government. But it may be assumed that, if the compensation is found to be unjust to the carriers, relief will promptly be afforded." The facts as they have reached us here in England are that Congress appointed a joint committee to determine what would be just compensation, and that, as soon as it became evident that this committee would report in favor of payments on a more liberal scale, Congressman Moon at the request of the Postmaster General introduced a bill not merely reducing the already inadequate mail pay, but also constituting the Postmaster General judge in his own case.

Take another instance: the Commission says that passenger fares are too low, and points out that they have been forced down by legislative enactment. "But we are confident,' 'they continue, "that, if the statutory fares are clearly shown to be unduly burdensome" (the Commission says that they have been shown to be) "the people * * * * will cheerfully acquiesce in reasonable increases * * * * and that the necessary legislative authority will be promptly given." How the cheerful acquiescence and the necessary legislative authority are to be secured the Commission does not explain, though it does elsewhere point out "the general impropriety" of a campaign of publicity.

Perhaps, however, the Commission would approve of a campaign of publicity directed to the legislature, though not to the Commission itself. I confess myself that I am unable to appreciate the distinction. "The law," they say, "fixes the standards by which the rates and fares of carriers must be judged, and the Commission can act only in accordance with these standards. We have no authority to approve rate increase with a view to stimulating business." I confess myself that I do not understand this. The duty of the Commission is to satisfy itself, after full hearing of all objections, that the rate, or the increased rate, is just and reasonable. Is not the fact that 1 or 100 or 1,000,000 members of the public who have to pay the rate think that they would gain more by the stimulation of business than they would lose by the higher railway charge, evidence for what it is worth that the increase is reasonable? I have always hitherto thought that one great advantage of your quasi judicial commission over our purely legal commission was precisely that your commission was entitled to and did take into account the whole circumstances of the case, and was not confined, as our commission is, to the consideration of evidence given on oath in open court.

Let me notice another point. In speaking of the unprofitableness of passenger service the Commission says, "In our opinion each branch of the service should contribute its proper share of the cost of operation and of the return upon the property devoted to the use of the public." As stated, this is a platitude. Of course it should contribute its proper share. But the Commission apparently uses the phrase as equivalent to "its equal percentage share," an entirely different proposition. The answer is briefly that this share is only capable of very rough approximation, and, further, it is more than questionable whether the allocation of charges as between passenger and freight on the basis of cost of service is economically justifiable. It is certainly not practiced in any other business in the world. Does anybody suppose that the Steel Corporation or a departmental store makes the same profit on all branches of its business?

I confess I am deeply disappointed with the decision. It may have been right. It may have been right to refuse the advance. I am sure that the reasons for refusal are wholly inadequate. The Interstate Commerce Commission, both in the scope of its functions, the magnitude of the interests involved, and the distinction of its personnel, is the most conspicuous rate regulating body in the world. If they fail, it means the failure of Government regulation, and there is nothing before us but government ownership, which to my mind would be a disaster for England, but a greater disaster for America.

We looked for a decision showing a broad and statesmanlike grasp of an enormous question as a whole. It might have guided the policy of the railways of America for years to come. Instead we get a series of recommendations and of detailed suggestions for economy, some of them of the dimensions of the ridiculous mouse. These detailed suggestions are made by a body of amateurs to a body of experts, who have already, in the opinion of the experts of every other country, among a population the most extravagant in the world, built and operated a railway system undoubtedly the most economical in the world.

Further Discussion of Effect of European War on Railroad Business

By Ivy L. Lee, Executive Assistant, Pennsylvania Railroad.

Note: In the September issue of the Railway World extracts were published from an address delivered by Fairfax Harrison, president of the Southern Railway at the Labor Day celebration in Spencer, N. C., on the effects of the war upon the railway industry, particularly in its application to the Southern Railway. The extracts that are published herewith from Mr. Lee's address, which he delivered at a mass meeting of Pennsylvania Railroad employes at Altoona, Pa., on September 29th, are in effect, a continuation of the discussion on this subject.

THE war has brought us face to face with a crisis in the railroad business. It is true that other lines of business are also faced with a critical situation, but the railroad should receive sympathetic attention for two reasons: (1) That its function is one of the necessities of civilization, and (2) That its property although privately owned is devoted to the public service.

At the close of the war or even during the war, if shipping and exchange facilities can be re-established, there is likely to be a spurt in business in the United States to supply the needs of the world. But the disarrangement in the machinery of trade is vital and may have results of far-reaching magnitude. In concluding a careful analaysis of the effects of the war upon the world's trade in its issue of August 22, 1914, the London *Statist* said:

"The reduction to poverty of the losing nations, and the waste of wealth and consequent diminution of purchasing power all around, cannot but adversely affect for a long time the prosperity of the whole world."

Whatever the effects of the war may be, it is certain that the United States will suffer least among the great nations of the world. Whether the war will lead with us to a period of great commercial activity or to a period of depression, this much can be safely predicted:

There will be a very material and world-wide increase in interest rates, and the demand for capital will be upon an unprecedented scale.

This would be inevitable if the world had no more to take account of than the cost of the war and of replacing the destroyed wealth now thrown into the cauldron of war.

Europe can pay her own debts by liquidating a large portion of her holdings of American securities. It is estimated that from three to seven billion dollars of our capital liabilities are now held abroad. Inevitably, we shall have to buy back a huge quantity of these, once a free security market is re-established.

We cannot possibly look to Europe for new capital for several years to come, and we shall be obliged to finance our own past enterprises. If we are to enjoy an era of expansion, we shall have to finance that too.

It thus becomes incumbent upon us to make our securities so attractive that Europe will be disposed to withhold them from sale as long as possible. As our railroads are, as President Wilson says, "at the very heart of most investments," we must see to it that our railroad liabilities are made sound and that fortifications are erected against the possible siege.

Bond and note obligations of American railroads maturing before the end of next year aggregate over $520,000,000. The Pennsylvania Railroad must next year refund some $96,000,000 of capital liabilities. In addition the amount of new capital required for the normal development of the American railroad system amounts to upwards of $400,000,000 per annum.

And yet what is the railroad situation? In general, it is one of reduced revenues and of inability to reduce expenses to correspond. Anybody will concede that the Pennsylvania is an ably managed railroad; that it has not watered its stock; that its accounts have been accurately kept; and its money carefully spent. The evils of American railroads that are sometimes complained of are not laid at the door of the Pennsylvania. But what is the Pennsylvania situation?

During the four years ended June 30, 1914, the Pennsylvania System increased its investment in railroad property by over $272,000,000. During that time its gross earnings derived from an increased service to the public increased over $34,000,000, while its expenses increased nearly $55,000,000.

Thus at the end of four years, after having dedicated $272,000,000 irrevocably to the public service, the System's net revenues were worse off by $21,000,000 than they were before the $272,000,000 had been spent.

Obviously that is a situation which must be met. It is a situation which has been intensified by the war, for now obviously a higher rate of return upon all investments must be earned else new capital cannot be obtained and the price of existing securities will inevitably fall.

There are many impediments in the way of reducing expenses. For example, there are arbitrary laws compelling the employment of unnecessary men. An examination of our accounts shows that the lines of the Pennsylvania System spent last year upwards of $1,100,000 on account of the extra crew law alone.

The management of the Pennsylvania Railroad would shrink from reducing wages. The System paid in wages last year about $190,000,000. This was at a rate of wages nearly 35 per cent higher than that which prevailed in 1900, and over 10 per cent higher than those in 1909.

The Pennsylvania has always paid a dividends on its stock. Its policy has been to pay moderate dividends, and make those dividends regular and reliable. No corporation in the world as a consequence enjoys a greater confidence on the part of the investing public. Over 90,000 persons are investors in Pennsylvania stock, nearly half of them women. The Pennsylvania dividend, conservative as it is, should continue to be a bulwark of American railroad finance. Its permanence and safety constitute an assurance to the public that the public service of the greatest railroad in the world will be maintained at a high standard.

It is believed that the public is coming to understand the importance of seeing to it that proper protection is given to the earnings of railroads,—"the one common interest of our whole industrial life," to use the words of the President of the United States.

The employes of the Pennsylvania Railroad have in the nearly 70 years of the company's history given signal illustrations of loyalty and efficiency. In reciprocity for what we believe will henceforth be the more liberal attitude of the public, there now rests upon the employes of the Pennsylvania Railroad an obligation of supreme moment.

The public must have the very best service which it is possible to give with the money that is available. And economy must be the watchword. The awful waste and destruction of war can only be replaced, and its effects minimized, by most rigid economy on the part of governments, corporations, and individuals everywhere.

This is a time when every railroad employe must realize that in a peculiar sense he is a trustee; a trustee of the investor's money, a trustee of the money the public has paid for his service. In so far as each officer and employe acts in every detail for the railroad as though he were using or spending his own money, just in so far will his responsibility as trustee be fulfilled and his company able to perform its high obligation to the stockholders and the public.

Trade Developments in Foreign Countries

By D. J. Donovan.

Note: Much has been said in the public press recently regarding our increased trade possibilities with South America, owing to the European war. Such possibilities are no doubt, greater at the present time than ever before, but it should be remembered that the trade is not there merely for the asking but owing to the methods employed in the past by European exporters, must be handled on a credit basis which requires banking affiliations not at the present time sufficiently developed to insure the full benefits which the present abnormal conditions have made possible. Furthermore, a large amount of educational work will be required to thoroughly familiarize South American merchants with the ability of our manufacturers to supply their necessities and the trade must be intelligently worked for and honestly catered to, if full advantage is to be taken of the opportunity. The following article by Mr. Donovan which recently appeared in the official organ of the Chicago Traffic Club, points out some of the difficulties to be encountered and some of the steps to be taken in order to overcome them.

THERE has been a good deal of advice offered recently as to increasing our export trade, particularly with the countries of South America. The fact that the principal countries of Europe are at war with one another gives us an opportunity to develop and increase our trade with Argentine, Brazil, Chili, Peru, and the other South American nations, freed from their competition, to a degree never known before. But merely to know where trade may be had, is no open sesame to securing it. The United States does a large business with the various countries of South America. It is capable of being expanded till the volume of our business will rival that of Europe, where many of our great manufacturing enterprises are entrenched and represented by their own establishments. Great commission houses also are the intermediaries by which millions of dollars' worth of business is handled every year.

The growth of our trade with South America has been steady; it covers many years of development; in some years development has been rapid owing to a variety of circumstances. It may be said that in the past, extension of our export trade was in a great measure coincident with slack demand at home. How rapid on the whole, and how steady has been the growth of our South American trade may be noted by calling attention to the fact that in the early '90's, the business between the United States and the Argentine was carried on by sailing vessels of from 500 to 1,000 tons register, two or three sailings a month, giving ample freight accommodation to shipyers. To-day steamers of 12,000 ton register carrying freight and passengers are engaged in the trade. And what is true of the Argentine is true of other South American countries, such as Chile and Brazil.

In the days of the sailing vessels many were American owned and flew the American flag. The freight money came to the United States and helped the credit side of Uncle Sam's dealings; later on the trade with the Argentine, as well as with other countries, was carried on by steamers, and naturally the greater growth of trade, the greater our debit balance to Europe grew; or to put it another way, we only got credit for the merchandise we sold to the Argentine, while the freight monies went to the credit of foreign shipowners who did our freighting for us. The bulk of the exports of South American countries consisted of raw materials, wheat, corn, oats, hides, wool, nitrates, copper, meats and other products that could be classified as raw material; these were mainly sold in Europe Great Britain being the principal buyer; the freight money for the ocean carriage also was paid mainly to English shipowners. Naturally this established great credit balances in favor of South American merchants; they in turn bought heavily of the manufactured goods that Great Britain and other countries of Europe had to sell. It was natural as the trade grew for English manufacturers and bankers, to establish their own houses or agencies in South American cities and they became in the course of time as familiar with the standing and resources of South American firms as they did with their own business concerns at home. Their shipping lines established their own agencies in the ports of South America and advertised the sea power of Great Britain, and with the establishment of regular lines of steamers composed of fast boats, the trade increased and the South American markets took a greater variety of goods and of increased value. Investment of European capital in railroads, harbor works, water works, light and power companies, induced South America to favor Great Britain in making purchases as against the United States. Credit was extended to South American business houses; the needs of their markets were carefully gone into; Europeans sold what the South Americans wanted; they cultivated their trade persistently and assiduously and on lines of permanency: a policy which all the manufacturers of the United States seeking export trade, have not yet adopted.

The policy of the merchants of Great Britain in their method of trading with the Argentine and other countries of our continent to the south of us, has borne fruit. Argentine has made marvelous progress in wealth and population. The same factors which aided our prosperity also made for theirs. The consumption of wheat the world over has rapidly increased; the surplus of the United States and the surplus of all other producing nations has been readily consumed and at good prices in recent years. Argentine has become a great producer of corn; her meat production has become enormous and found a ready market in Europe in recent years, for all she could spare, at increasing prices; and until the last ten months, all this vast cereal production of hers was sent to Europe, and established her basis of credit. Now a great deal of it comes to the United States, as our own production is inadequate to easily supply our own needs.

With the terrific eruption of war in Europe came a stoppage of their export business to South America as well as our own. Her credits with European bankers are not available and her credits with bankers of the United States are of a limited volume. Naturally trade between the United States and all of the South American countries halted; the triangular channel in which the trade was hitherto financed was blocked by the war, and until a new channel is provided or the war comes to a stop, business must be reduced in volume.

Much is said of the lack of steamer lines operating between the United States and South America; this may be dismissed with the statement that there are more than enough steamship lines and steamers to carry all the freight offered for shipment from the ports of the United States to the ports of South America. The difficulty which has halted our trade in Argentine, and Brazil as well, is financial; our merchants will not sell unless they are assured of payment for their goods; we have no machinery by which credit may be extended to foreign buyers with safety to all concerned; (this is, of course, a general statement, and does not refer to those concerns which have their own offices and agents established there); but this barrier promises to be soon swept away. The National City Bank has arranged to establish branches in some of the cities of South America, including Argentine, and in due course of time some of the handicaps the merchant of the United States suffers from will be a thing of the past.

There are, however, steps which should be taken in order to insure a steady growth of our exports; catalogues should, if possible, be printed in Spanish and English, for Argentine merchants: if that is too expensive, then it is better to print them in Spanish. The price of goods should be made f. o. b. the port of shipment in the United States. The price quoted should cover an Atlantic, and a Gulf port as well.

The ocean rate of freight should also be given in the catalogue; it, of course, need not necessarily be the lowest possible rate that may be secured, but a rate that may be safely figured on for a period of a year and which will stand good, barring unexpected contingencies, such as war, as the buyer of American goods in a South American port must know with some degree of accuracy what his goods will cost him landed. The gross and net weight of the package in which goods are put up should be given. The three measurements, and the total cubic measurement should be stated. If the cost of packing is included in the price of the goods, that should be so stated; if not, some idea as to the packing costs ought to be given. A merchant of South America is many thousand miles from the buyer of the United States. He has no means of knowing what the rail freight will be from a point in the interior of the United States to the port of shipment. Neither has he knowledge of what the ocean freight will be; and yet if he is to sell his goods at a profit he must know what his goods will cost him in his home port. This is a phase of export business that our merchants seeking export trade too frequently overlook.

To cultivate this trade of South America is expensive; the ocean voyage is a long one; their markets are well covered by European manufacturers who know the trade and its needs and who are willing to extend long time credit, and charge accordingly for so doing. It is, therefore, no easy matter to introduce new or competitive goods in those markets; the present time is the most favorable known in a generation, and if taken advantage of properly, the foundation can be laid for the gradual transfer of the trade of Europe to the United States in those commodities which the United States produces in competition with Europe. In our country we have export associations, and traffic associations in great number. With them many manufacturers are affiliated. It should be possible for those manufacturers wanting an outlet for their goods to combine and send a representative to Buenos Ayres, taking samples along, and they must be able to give the price landed in Buenos Ayres; be able to assure buyers that the goods are standard and staple, and that weights of packages and measurements may always be counted on. To many manufacturers these seem unnecessary particulars, but they are essential to the buyer, as he must have them in estimating the cost of his goods landed in his home port.

Recording and Classifying Railway Accidents

On October 15 Mr. R. H. Newbern, superintendent of the insurance department of the Pennsylvania Railroad System, addressed the National Council for Industrial Safety on the safety problem of railroads. Mr. Newbern said, in part:

"On the Pennsylvania System, employing normally 225,000 men and carrying over 185 million passengers and with a freight movement exceeding 385 million tons annually, there are 60,000 reports of accidents to employes and 10,000 reports of injuries to passengers and others forwarded to the company's insurance department. In order to simplify the handling of this large number of reports, the 'Hollerith' system was adopted and a code prepared showing causes, nature of injuries, occupations, locations, days disability and other items of information necessary in the analysis of accidents. As the reports are received they are codified, each item of information being marked with its designated code number and a permanent record of the accident is transferred to a card by means of a punching machine, and when statements or data are needed for the information of the executive or operating department or for the guidance of the safety organization, the cards are sorted by means of machines and the desired information obtained quickly, accurately and economically.

For statistical purposes employes are separated into two classes, one, employes in the maintenance of equipment, commonly known as shopmen, and the other, all employes, such as trainmen, maintenance of way men, station men, etc., designated as road and yard men.

The statistics provide for the following information:

The number killed and injured by detailed causes; nature of injury by cause and occupation; length of disability; occupations; length of service; time of day or night; weather conditions; division; grand division; shops; large stations and yards.

The statistics are compiled on the same basis for shop and road and yard aaccidents, excepting as to detailed causes, there being 360 shop causes and 340 road and yard causes, making 700 separate causes of accidents. The causes in turn are classified under 36 general headings which indicate the nature of the work at time of accident.

By comparing the number of accidents under each general heading, we ascertain what kind of work is the most hazardous and the specific cause under which the accidents are reported. The primary cause of every accident is indicated. The records are kept by the divisions, shops, stations and yards, and it is, therefore, easily seen at what points any particular kind of accident is most frequent.

There are included in the statistics additional information bearing an important relationship to accident frequency, such as the average age of employes, length of service, etc. Regarding the length of service, it was found that during the year 1913 there were 90,000 new men employed, although the total increase in the number of employes for the year was less than 9,000, the greater number of transient employes being in the maintenance of way department. The statistics developed the fact that during the year 25 per cent of the men killed and injured had less than six months' experience and that 28 men were killed and 2,391 injured who had been in the service less than 30 days. Assuming a similar experience on all the other railroads of the United States, at least 360 men were killed and 15,000 injured last year having less than one month's experience, and many met death during their first week's work—not because they were careless or fool-hardy, but because they were ignorant of the hazards of the work.

A business employing men in more than 100 occupations will be unable effectively to teach the doctrine of safety unless some means are provided to discover the number of injuries sustained by men in each specific occupation. The statistics, therefore, are so arranged that the number of injuries and fatalities can be shown in each department and to each occupation of the various departments, also the reports are tabulated to show the specific cause for each occupation.

The number of accidents occurring during each hour of the day or night is shown as the time of the accidents suggests various preventives, such as improved lighting facilities and rearrangement of working hours.

A statement of so many men injured on railroads during a certain period does not convey a proper meaning; it is the loss of time that shows what the employe really suffers. Therefore, the statistics provide for the number killed, the number injured, the number of indefinite injuries and the actual number of days lost. Our statistics include all accidents resulting in a disability of one day and over. It was found that 18 per cent of all the injuries involved less than four days' disability, and the number of "15 days or over" accidents (the minimum period covered by liability laws) amounted to 50 per cent of the total days' disability.

Our statistics also show the nature of the injury; this information embodies 141 different kinds of injuries, included under the following general headings:

Amputation, fractures, eye injury, electrical shocks, sprains and strains, burns, bruises, dislocations, incised wound or laceration, injuries not included above.

This information enables the management to study methods of treatment to reduce the length of disability. Take the subject of fractures for example: There were 758 cases last year resulting in 19,190 days of disablement, 87 indefinite disability cases and 53 fatalities. The medical profession recognizes the necessity for the best treatment of these injuries, as fractures may result in extended disablement on account of improper treatment.

Our experience clearly indicates that comprehensive accident statistics furnish a most effective means of suggesting remedial measures in accident prevention work.

Automatic Safety Devices on the Panama Railroad

Note:—The following record covering the installation and operation of automatic safety devices on the Panama Railroad, will prove of interest to American operating officials in view of the fact that on account of the peculiar local conditions involved, it was found necessary to incorporate many original details into the general scheme of protection in order to obtain the desired results. Aside from these details, the standard signal practices in the United States have been closely followed.

WHEN the old main line was in service, prior to February 15, 1912, the heaviest main line traffic was carried over double track. Trains were operated and spaced by manual block signals. This plan of handling traffic was necessary at that time, because the chief train dispatcher would not have been able to issue the "Running orders" for so many extra trains, and the flexibility of the caution aspect on the manual block signal, in addition to a rigid enforcement of the yard limit rule, allowed trains to follow each other at a less distance than could be successfully accomplished by automatic block signals. When the old main line between Gatun and Gorgona was abandoned and traffic partially shifted to the single track on the relocated line, conditions changed, and the factor of safety had to be given immediate consideration, resulting in the following program:

First—A scheme of signal aspects as simple as possible, but sufficiently flexible to care for present and future traffic.

Second—The preparation of a book of signal instructions covering such aspects, and later, the revision and rearrangement of the "Book of Rules" which included these instructions.

Third—The examination of all transportation men on the rules, and their instruction as to the use of signals.

Fourth—The protection of congested points by interlocking plants, or other mechanical signals; also, the protection of the main track on descending grades by derails located in sidings and operated from the switchstands.

Fifth—The installation of automatic block signals as fast as permanent track and reduced traffic conditions would permit.

Delays of various kinds, however, made it impossible to entirely fulfill the fourth and fifth requirements above mentioned. The signal instructions were issued to the transportation forces early in 1912, and a description of these aspects appeared in "The Canal Record" of November 13, 1912. The revised "Book of Rules" was distributed in December of the same year. Examinations were held at various points on the Isthmus in a baggage car assigned to that service. A committee, representing both the Isthmian Canal Commission and the Panama Railroad, was appointed to conduct these examinations, and to explain the new scheme of signaling. It required approximately four months to examine and instruct the 450 transportation men. These were taken in classes of ten or twelve, and the average time required per class was eight hours. The committee's aim was to demonstrate the relation between definitions, rules, and train orders, but the real test consisted in writing 38 typical train orders on a blackboard; in this manner, 51 vital points were brought out through questions and discussions.

The protective devices now in use on the Panama Railroad consist of interlocking plants, station signals, switch signals, pipe-connected derails, and automatic block signals. During the past two years, the disc signal aspect has been eliminated, and all existing semaphore arms were changed to operate in the upper right hand quadrant. During the same period, 23 interlocking plants, with 365 active levers, 66 station signals, 18 switch signals, 26 pipe-connected derails, two staff machines, and 122 automatic, or other power operated signals were installed. Many of these have been changed or rebuilt to keep step with the changing conditions, and within the past few months, some unnecessary apparatus has been removed.

At old Tower R, the train movement at one time averaged one train for each one and two-thirds minutes. This average for nine hours is one, it is believed, that has been rarely exceeded in the busiest terminals in the United States. Circumstances made the installation of a mechanical interlocking machine necessary, and the time element was so valuable that derails had to be left out of the combinations, in order to save the few seconds of time required to handle the additional levers. In order to expedite line ups and prevent confusion, the yardmaster, located in the upper story of the cabin, indicated all routes on an electric track diagram by the means of push buttons. Electrical adjuncts, such as indicators and power operated signals were added, in order to safely expedite train movements through the interlocked limits of old Tower R, and electrical connections to Gamboa cabin protected traffic from head end movements while on the Gamboa bridge. This plant was in operation for seventeen months, and during that period no accidents or collisions occurred within the protected territory.

In March, 1913, when the heavy dirt train traffic was shifted from the Canal tracks on the lower level to the Panama Railroad main line and passed through the Miraflores tunnel, it was necessary to incorporate a better system of protection through this congested territory. An absolute staff system was installed and the converging tracks at North cabin and South cabin interlocked. This apparatus was described in "The Canal Record" of January 11, 1913. In the above arrangement it was also necessary to omit derails on two of the tracks leading into the tunnel for the simple reason that the time required to handle even two additional mechanical levers was so valuable that it had to be considered. During the existence of the heavy traffic, it was no uncommon occurrence to pass 230 trains through the tunnel between 6 A. M. and 6 P. M., and the daily average was over 200 trains. With the maximum traffic, as enumerated above, the capacity of the tunnel and the staff system was taxed to the limit. The staff system controlled this territory for over thirteen months without an accident, but on account of a recent reduction in the number of trains, it was superseded by automatic signal protection, covering the gauntlet track installed through the tunnel a short time ago.

The automatic scheme now in use at the tunnel is so designed that the automatic signals stand normally in their "Stop" position. A train approaching with the current of traffic from either end enters a clearing section 1,500 feet in advance of the signal. If all conflicting entrance points and the gauntlet are unoccupied, the signal will change to "Proceed," and allow the train to pass on through the tunnel. If not, the signal arm will remain in the horizontal position. Movements against the current of traffic are controlled in the same manner, except the clearing sections are only 150 feet long, requiring the train to come to a full stop before entering the tunnel. The first train entering a clearing section will receive a "Proceed" aspect regardless of right, class or direction. This change represented another compromise on the side of economy, and safely handles the present traffic without any manual assistance at either end of the tunnel.

A number of questions have come up within the past few months relative to automatic stops. When a railroad has to resort to automatic stops as an additional check upon the human element of its traffic personnel, it immediately removes the responsibility from the engineman and places it in the hands of the signal maintainer. Such a step is, according to general belief, not in accordance with the fundamental principles of good railroading, as the engineman should at all times have complete control of his train, and with the scheme of aspects on the Panama Railroad and their controls there appears to be no reasonable excuse for overrunning a signal in its stop position. To fill all requirements, an automatic stop should be able to successfully cover the following:

1. It must have continuous control.
2. It must operate with the engine running either forward or backward.
3. When two or more engines are on one train, it must affect the leading engine only.
4. It must operate on both steam and electric propulsion.
5. It must comply with and stay within the theoretical clearance of both roadway and equipment.
6. It must work under all weather conditions.
7. It must stop a train should any of its parts be damaged or missing.
8. It must not be dangerous to passengers and employes.
9. It must be sufficiently rugged to withstand wear, tear and vibrations.
10. It must be convenient for inspection and repairs.
11. It must register each train stop it has made.
12. It must allow a train to pass a "limited speed" aspect below a predetermined speed, or stop such trains if the speed is greater than the maximum speed allowed.
13. It must make an application of the air in beginning to stop a train, regardless of speed, at not less than 4,000 feet in advance of any home or automatic signal with its arm in the horizontal position.
14. It must be so arranged that an engineman cannot cut the apparatus out of service during the trip, and, in the event an automatic stop is made, it must be necessary for him to get under engine or tank to release brakes.
15. It must be so arranged that trains cannot enter the main track at any point unless the route is unoccupied and the switch indicators show "Proceed."

With these requirements in sight, it is seen that undue complications enter into such schemes of safety devices; that they place the movements of trains subordinate to the factor of safety, shift responsibility to the wrong personnel, and reduce the actual capacity of the main track from twelve per cent to 35 per cent, according to the spacing of existing signals. The local conditions on the Panama Railroad and the personnel in the train service make automatic stops unnecessary.

INTERLOCKING PLANTS.

The protection offered by the interlocking plant is confined to a restricted territory, such as a railroad crossing, a junction, end of double track, etc. On the Panama Railroad, all plants are mechanical. The locking and machines are built in the field, and all material is in accordance with the latest signal practice.

The cabin contains the machine the levers of which correspond to the outside functions, and they are so interconnected that all levers must be manipulated in a predetermined sequence. This arrangement gives the signalman complete control over all switches, derails and signals connected to his machine. The connections from the lever to switches, derails and detector bars are made by 1-inch pipe specially riveted and carried on antifriction pipe carriers; this pipeline has a travel of 8½ inches, and turns are made with bell cranks. All pipelines over 150 feet have to be compensated for changes in temperature. The connections to mechanical signals are made with No. 9 gauge (B. W.) special galvanized steel wire, supported on wire carriers, and require no compensation in distances less than 1,200 feet. Turns are made by inserting chain in the wire line and carrying this around 10-inch sheave wheels. Switches are locked by a round plunger the end of which is sawed square, and they are so adjusted as to "stick" if the points stand open three-sixteenths of an inch, or more.

To prevent a switch or derail from being thrown under moving equipment, a detector bar is placed alongside the rail. This bar is ⅜-inch by 2¼ inches by 55 feet, supported by 14 radial links, and operates through an arc of 120 degrees when being moved in either direction. It is placed on the outside of the rail, inclines at an angle of 15 degrees toward the center of the track, and rises one and one-quarter inches above the top of the rail, when on center. The presence of car or engine wheels over the bar prevents the signalman from throwing the lock lever, and as that lever locks the switch lever both inside the cabin and at the switch proper, it is, therefore, impossible to throw a switch under a moving train.

All signals are equipped with an additional check called a bolt-lock; this works in conjunction with derails and switches in such a way that the signal cannot be brought to its "Proceed" position unless the track is properly lined up, and, on the other hand, if the signal does not respond to the lever movement and go to its stop position as the signal lever is placed normal, the route cannot be changed until the signal is placed at "Stop" by some other method.

AUTOMATIC SIGNALS.

Automatic signals differ from manual block signals in several respects. They operate automatically, as their name implies, without any manual assistance. Except at Miraflores tunnel, they operate normally clear, instead of normally danger, as with the manual block, and they provide "space element" blocking, instead of "time element" blocking. Automatic signals space and protect traffic at all points outside of interlocking plants, giving both head end and rear end protection, as well as offering protection against broken rails, misplaced switches, and cars beyond the fouling point in turnouts. The control of the signal arm between "stop" and "limited speed" is actuated by track circuit controls ranging from four-tenths of a mile to 2.65 miles, according to grade, traffic and other conditions.

The continuous track circuit is the fundamental factor of their automatic operation. Battery at approximately one-volt pressure is fed to one main track rail; the current passes up this rail, through a 4-ohm track relay, and returns on the other rail to the battery. This current, in passing through the relay coils, energizes them and picks up the armature on the relay; this, in turn, relays a local current of about ten volts that operates the signal motor, energizes its slot arm, and holds the signal in its "proceed" position.

When a train enters the track section, its wheels and axles form a path of much less electric resistance than the relay, so the current takes that path and the relay coils being thus deprived of energy, cease to attract the armature, which opens by gravity. The local circuit is then interrupted, the slot arm disengages, and the signal arm itself falls to its "stop" position by gravity. The act of throwing a main track switch for a turnout places the same relative conditions in effect. The switch point mechanically operates a switch box that short circuits the rails in the same manner as the wheels and axles under the equipment. In order to prevent trains, running under clear signals, from being "sideswiped" the outer ends of all crossovers are also equipped with switch boxes, which require both ends of all crossovers to be left lined up for straight track. Every electrical and mechanical feature incorporated in the entire system is so designed that, should it break or any part of it be removed, the signal will go to "stop," thus placing a so-called signal failure on the side of safety in all cases.

The control of the signal arm from "limited speed" to "normal speed" is actuated by a polarized line circuit. The signal ahead feeds battery to the line through a quick acting pole changer; this circuit is then carried through front contacts on a 4-ohm relay at each track section to a 1,000-ohm relay at the following signal. The neutral armature is actuated by current in either direction, but, in addition to this, the 1,000-ohm relay has a polarized contact that is energized and moves according to the direction of the current. These contact points on the polarized relay are used to make or break an additional local circuit that controls the signal arm between its 45-degree and its vertical position.

Automatic signals may always be distinguished by a number on the front of the mechanism case. This number indicates, in miles and hundredths, the distance from Colon. Northward signals are always given even ending numbers, and southward signals uneven ending numbers. This scheme of numbering allows changes or additions without disturbing the individual numbers on other existing signals, and allows concise and intelligent telegraphic report to be made in case of a signal failure.

In introducing automatic signals into operating problems on the Panama Railroad, rapidly changing conditions and the peculiarities of the tropical climate developed many new details never before encountered, although, in general, the best signal practice followed by railroad systems in the United States has been observed. The maintenance of automatic signals on the Isthmus, however, requires considerable more work and a much more rigid inspection than in the United States. This is due to the deterioration of battery, the corroding effects of the climate on contacts, the tendency of finished iron parts to rust, and occasional injuries of various kinds received from outside agencies.

The automatic signals between Colon and Miraflores average 210,000 arm movements per month. The reported interruptions that are chargeable to the system have averaged less than fifteen per month. When the automatic signals are extended to Panama, some existing interlockings rearranged, and two additional plants installed, the factor of safety on the Panama Railroad will be co-ordinate with its other operating problems.

Statistical Control of Railroad Operation

NOTE: The following extracts are taken from an address delivered by Mr. W. M. Baxter, special investigator on General Manager's staff of the Canadian Pacific Railroad, before the September meeting of the Canadian Railway Club.

IN the early days of railroading, the use of statistics as a means of controlling the operations was very imperfect. Competition was not usually important and the railroads were of short mileage, reaching only a limited territory. The margin of profit was large on rates amounting to only a fraction of the cost of hauling similar goods in wagons or on pack trains. But the profits of the enterprise lured much new capital. Competition became keen, lines were extended, rate wars took place and the solvency of railroads soon became a matter of careful management.

The business of a railroad may be divided into two distinct departments, namely, acquiring traffic and moving traffic, which is similar in industrial enterprises to the selling end and the manufacturing end. A railroad manufactures and sells transportation.

The great difference between the producing of the railroad's commodity and that of a flour mill, or coal mine, from the viewpoint of management, is in the fact that the plant and equipment of the railroad is dissipated or spread over a large stretch of country, while that of the flour mill or coal mine is concentrated, so that all supervision must be delegated, most of the work being done by transportation units, which are continually changing their location, so that they cannot be supervised except in a scattered manner.

An unusually large number of employes must work without supervision and the margin of operating profit is exceedingly small, when compared to the average returns on the investments in manufacturing and farming.

Right here I wish to say that the gross earnings for 1913 of Marshall, Field and Company, Chicago, America's largest wholesale dry goods firm, was $2,000,000 greater than that of the Illinois Central Railroad System, and the interest on the investment was 14 per cent, while that of the Illinois Central was 6 per cent. You can well imagine the furore and condemnation and the howl of "watered stock" that would have been evinced from the public and politicians, if this railroad had earned 14 per cent. The Interstate Commerce Commission would more than likely have been in night session.

As the general manager usually spends the larger portion of his time in inspection and under normal conditions seldom directs the movements of trains, he sees but an infinitesimal volume of the company's business moved. As the scope of his vision is limited, other methods must be resorted to in order to check the operation. The means of accomplishing this is to separate the operation of the road into rigid and definite units and then to compare these units with similar ones on other roads, or with the same road at various periods, or with arbitrary standards chosen as guides, or bench marks.

Controlling a railroad by means of statistics might be defined as the process of determining the unit in each operation and then maintaining these units as nearly rigid as possible, seeing that they are collected, reported accurately and promptly.

The basic operating unit in freight traffic is the ton-mile, which is the product of the ton and the distance. The basic unit in passenger traffic is the passenger mile.

There are six important statistical units deducible from these two fundamentals, which are defined as follows:

1. The average train load, either freight or passengers, is obtained by dividing ton mileage and passenger mileage by train mileage.
2. The average carload, freight and passenger, obtained by dividing ton mileage and passenger mileage by the respective car mileage.
3. The average length of haul for passengers and freight respectively, obtained by dividing passenger mileage and ton mileage by the total number of passengers carried and the total tons moved.
4. Ton miles per engine hour obtained by dividing the engine ton miles by the number of hours the engines are in service.
5. The average revenue per passenger mile and per ton mile, obtained by dividing the freight receipts by ton miles and passenger receipts by passenger miles.
6. The average density of traffic per mile of road, obtained by dividing ton miles and passenger miles by the length of road.

It is unfortunate that this data cannot be given to the executives earlier than five or six weeks after the operations have occurred, owing to the enormous concentration and calculations which must be resorted to in arriving at them on a large system economically. While they are of final value in determining the general efficiency of the system, it is necessary to have a more immediate check in the form of current records.

Perhaps the most tangible source of daily information is the train sheet, which is received by the train masters, and superintendents, from the despatchers. This sheet records the movements of all trains on the division, showing their consist as to loads and empties and number of cars in the train, and sometimes shows the number of passengers carried on each of the passenger trains, as well as the general movements of traffic, the observance of schedule time, the cause of delays and weather conditions.

By this means of concentrating upon a number of primary officers as much first hand detail information as they can absorb, the foundation of statistical control has been laid.

The results of these primary officers' observations are collected and passed on to their next superior who receives similar reports from many such primary officers and in this way the operations of the road and work performed is reported with diminishing detail, until the chief executive is reached.

The division superintendent is undoubtedly the most important primary officer. The operation of his territory is reported to him daily, and frequently on congested terminals he receives certain information hourly. In addition to this daily data, he has a number of statistical sheets prepared monthly, which show in condensed form, sometimes graphically, the comparative results of a large number of operations on a division, one month as against another, one day as against another, and one year as against another.

When these records are graphically presented the sheets are ruled with a number of vertical lines, representing the number of days in a month, or the months in a year, or in other words, progress of time, while a horizontal ruling to scale represents volume or quantity, as is shown in the illustration.

In this way the directing officer can readily see for example what has been the average tons per train mile, and the average pounds of coal consumed per 1,000 ton miles for a certain district or territory for a number of months, compared with the same months of the previous year, or if the records have been kept for a number of years fair indication will be had of the season's effect on the traffic.

The important daily returns which a superintendent receives are those showing the number of trains of loaded cars, empty cars, and total cars received and forwarded in each direction at all of the terminals, also this same information for train movements at important intermediate points. He must know the entire train movement and the tonnage movement, and the failure to perform a given service of these movements as expressed in delays and other causes, must be thoroughly investigated and remedies applied. He is informed about the conditions of each of the yards and terminals on his division and also about outside important terminals, which may affect movements in his territory. He knows the demand for freight and passenger equipment and the class of each required at the various points, as well as the available supply, and the condition and amount of power to move it. All of this information is of a statistical nature.

The officer next superior in rank is the general superintendent. He has received through the superintendents statements showing by divisions the number of engines assigned, total number of through engines shown on the train sheets, the number of through freight engines out of a shop and available for service before a specified time, usually at midnight, the number of through freight engines in shop for repairs and reported as coming out within 24 hours, and those which will not be completed in 24 hours, and also the average mileage made by these engines in service, special engine assignments, such as wayfreights, passenger engines, switch engines, work trains, pick-ups, etc., together with general remarks on the entire power situation.

He also receives reports on the cars handled at stations, showing the number of cars of merchandise on hand and when unloaded, together with information relating to special car movements. He is also notified concerning traffic exchange at all foreign line connections and if there is a special traffic, originating in his territory, such as coal mining, or some big manufacturing industry, he is advised of the number of cars moved and supplied, and a statement of detentions and their causes, as well as a report on the weather. While these are the principal reports he receives there are numerous special and minor statements furnished or compiled in his office daily, weekly, and monthly, which are beyond the scope of this article.

It is evident that no general superintendent could exercise close watchfulness over the thousands of separate items which these reports cover, and in reality he does not. A man in this position not trained on the property could not make efficient use of them, as the information gained is not so much absolute as relative. As the great majority of the data he thus receives must be judged comparatively to be of use, the graphic method of recording statistics is perhaps most practical and is instantly read.

The general superintendent, being familiar with all the conditions of his territory and knowing how it ought to operate, can look for the deviations from the results he is expecting. It may be fairly said that his system of control is by deviations from known standards.

The general manager, however, receives a smaller number of reports dealing only with the principal topics. All of these general considerations and many other local ones, the managing executives have clearly in their minds, but accurate statistical information must be the basis of their judgment in any specific case. They must receive constant advices relative to the current productive power of various localities on the system, the state of the wheat crop, the cotton crop, the lumber market, or seaport traffics, so as to be able to foresee the possible future requirements necessary to handle the business expeditiously. This is again a matter of statistical organization, but it can be made to yield large results in actual operating efficiency.

The traffic department and the operating department must work hand in hand in their investigation of anticipated business, although from different motives.

The traffic manager is interested primarily in car supply and train service. It is his duty to secure the largest possible number of routings of business actually in sight and also devise means for creating business that is not in sight. His business is divided into two main classifications, local traffic and competitive traffic, and he requires daily statistics to show how his local traffic compares with his expectations or with other seasons, and it is of great importance to him to know how his local agents are handling the competitive situation.

Even the local traffic is probably competitive with the traffic of other roads serving other markets, and the traffic manager must gauge the prosperity of his local industries largely in terms of their output and this can be done only by comparative statistical data.

The intricacies of the mechanical department is perhaps most susceptible to statistical control. It deals with plain units in great variety, as for example, pounds of coal consumed per specified service as per train mile or ton mile, or engine miles between stoppings or axle miles per hot box. There are really myriads of details in the mechanical performance of cars and locomotives, which can be standardized by means of statistical records. And deviations from these selected or normal standards will show up in great contrast, thus plainly denoting where investigation and remedy is needed.

The superintendent of motive power and his primary officers are continually engaged in these investigations.

Statistics of earnings and expenses are the ultimate check on all of the road's records, and when taken in conjunction with the statement of work performed and shown graphically, present the final picture of the system.

Without knowledge of the work done, however, earnings and expenses are not an adequate means of control. Many roads west of the Mississippi River in the United States, operate for 60 per cent of gross earnings or slightly less, while in the East the average is nearer 70 per cent. Thus the operating ratio is an uncertain test of efficiency. The high rates in the newly settled parts of the country make relatively easy a showing which the best operation in the world could not accomplish in a territory of intense competition of long duration, where the struggle for business has reduced the margin of profit of the railroad to a minimum.

The Engineer's Part in Port Development

By Francis Lee Stuart, Chief Engineer, Baltimore and Ohio Railroad.

Note: The following extracts are taken from an address delivered by Mr. Stuart before the National Association of Port Authorities at Baltimore on September 8, 1914. As the question of railroad investment in terminals is one of absorbing interest at the present time, Mr. Stuart's discussion of some of the more important problems involved in port developments, will prove of unusual interest to our readers.

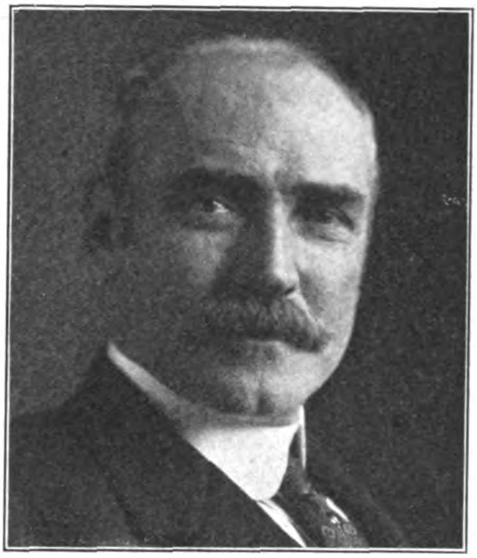
FROM the nature of the construction for port development an engineer is selected to design, oversee and superintend the physical construction of piers, docks, the dredging and various other works which pertain to the port, but I would like to impress upon you the importance of calling upon him for consultation on the larger aspect of port development. From the engineer's very training, they have been spending their lives in trying to sift the wheat from the chaff, get at the realities and to see things as they are, for the purpose of accomplishing results.

A port is that part of a large city which is used for terminal for water and rail and other transportation agencies. The port is so intimately connected with the city itself that the harbor section cannot be separated from the general problems of municipal growth, except possibly as to its finances, and must be subordinated and become only a part of the general municipal policy. Aside from the many minor influences on its development the two predominating influences in the proper solution to increase its efficiency for the comfort, convenience and pleasure of the community, and economy of service to the business and manufacturing interests are the water transportation interests and rail transportation interests.

Both of these transportation interests carry passengers, freight for local zones adjacent to and within truckage distance of a terminal, package freight for trans-shipment and bulk freight for trans-shipment.

In the matter of passenger travel, the movement of people from one section to another tends to a national spirit, a unity of thought, a greater degree of education and cultivation, an increase in business, an interchange between sections and the happiness and contentment of the people, and there is no more important civic matter for the comfort and growth of a community than that the distributing points for travel to and from a city should be so located that access to and from the homes and offices of the community should be with the least expenditure of time and energy in proportion to the length of the trip undertaken. Generally speaking, travel by rail far exceeds the amount of travel by water, and the railroad trip is a matter of hours while the water trip is a matter of days. Unless there are special conditions, the two interests do not compete, and one is forced to seek the waterfront and the other is usually located near the center of the city.

Freight for local zones had formerly, on the part of the water interests, been merely transfer of cargo between water crafts and horse-drawn vehicles. Economies required by competition have reduced these zones within the section of industrial utilities to a trucking distance of one or two miles, and evolution in the efficiency of pier use and the size of vessels caused a demand that this effective zone of influence should be increased by connection with rail interests, so that the other industrial zones of the city may be reached economically. On the railroad side, their entrance into a city and lines through a city have caused industrial zones to arise, which are served by local freight stations, and they have no desire for piers of this character except in zones along the harbor, which they are unable, for financial reasons, to serve by their own rails. When they do use pier space for this purpose, with their own water equipment, 100 per cent of the business passing through such a pier is for the convenience of the immediate industrial zone around that pier.


Francis Lee Stuart.

Package freight for the prompt dispatch and economical handling demanded by commerce, requires rail connection for the transfer of cargo between vessel and car, and where the larger part of the cargo is of this character the ship must seek such a pier.

Bulk freights for trans-shipment, such as coal, ore, grain, lumber, etc., require certain kinds of equipment on land and water, are trans-shipped at piers having special facilities and are usually, or should be, kept out of the congested industrial section of the harbor.

An analysis of the business handled and its relation to industries adjacent, and the economic requirements of both water and rail interests, would indicate that the logical preferences of locations of piers should be as follows:

1. Passenger business, such as ferry, excursion, short haul coastwise.

2. Piers for either railroad floating equipment or coastwise business of which 100 per cent of the freight passing through the pier is for distribution within a trucking zone to interests which have been built up on the basis of such a facility.

3. Shipping interests, the larger part of whose business is for local truckage distribution.

4. Ocean liners carrying passenger traffic and general cargo.

5. Ocean freighters carrying large proportion of general cargo.

6. Package freight for trans-shipment.

7. Bulk freight for trans-shipment.

For the first two classes rail connection with pier is not necessary and often, from the congestion caused at such points, not even desirable; for the third and fourth, rail connections with piers desirable, but not absolutely necessary; for the fifth, sixth and seventh, rail connections with piers a necessity.

There is a great difference in the financial and physical requirements of the interests for handling the various classes of business enumerated.

From the growth of the industries of our country the largest proportion of water freight is collected by the railroads and brought to the ports. Seventy-five per cent of the business of the coastwise shipping companies of the ports of the United States is for trans-shipment from a port to another port for distribution by rail to interior points, or received by rail at a port for transportation to another port for distribution. Ocean-going business is very similar to coastwise trade, and the largest proportion of ocean-going freight is collected at a port by railroad routes for transportation to another port for further distribution by rail.

For the shipping interests, the right of way is free and their capital account is practically the cost of the carrying units (the ship),—and their operating account, the running expenses and dockage facilities at their port terminals—and in their operation and methods of business they have a great flexibility, and are in the enviable position of being able to withdraw their carrying units from a pier, or unprofitable locations, or a port, or even a country, as the business demands. Their rates are made by competitive business conditions and not by commissions, except in so far as they are affected by wise or unwise maritime laws of the nations under which they sail.

The railroads, which are the largest co-partners or agents for the collection and distribution of freight for the water interests, are pre-eminently a part of the port as the shipping and should also be considered as one of the primary parts of a port.

The conditions under which their part in the port development is carried on should be borne in mind. Under a federal valuation act the Interstate Commerce Commission has undertaken the valuation of all the railroads of the United States, and regardless of the purposes which were in the minds of the instigators of such a valuation, in my opinion it will result in a benefit to the railroads and, through them, even to the water interests. Among the results which will be accepted as facts, it will surprise me if it is not found that at least 30 per cent of the capital of the trunk lines is invested in terminals in cities having water transportation, and possibly 50 per cent or more of their capital in what may properly be termed terminals of all kinds in all cities. This subdivision of the capitalization of the railroads alone will give you an idea of the problems which confront the railroads, and also, the port authorities, for part of their problems are your problems.

The railroad system may be likened unto a tree, with rootlets and leaves and branchlets being the necessary terminals for collection and distribution of the elements which pass up and down the trunk and larger branches of the tree, the branchlets and rootlets costing 50 per cent of the entire capitalization, and the branchlets and rootlets, when once built, are fixtures, immovable and without flexibility.

It is for this reason, among others, that I am unable to satisfy my mind that there is any outstanding rational method so far advanced for basing rate regulation on the cost of haul of any one commodity between any particular localities on a large system.

The rate is based on the haul, on the portion of the length of the trunk and main branches used, the entire length of which represents 50 per cent of the capital cost of the investment, and is subject to control of commissions, whose rulings are subject only to the application of a court test of confiscation of its individual rulings and, so far, no court test of its collective rulings which, after all, should be the final test, and the results of which are burdening and, from the facts submitted, in my opinion, unnecessarily retarding the growth of this great transportation agency and the country.

Referring particularly to the railroad situation at a large seaport. Such a city usually has four distinct districts of utility; first, the waterfront, second, the industrial district, third, the business district and fourth, the residential district, through all of which zones the railroads have to buy a right of way to even reach the waterfront and, having reached it, in addition to lighterage and floating equipment, piers have to be constructed at their own expense which are suitable to the particular kind of business which they carry on, with special loading and unloading facilities, and which become obsolete as soon as the character of the business changes. Owing to its obligations to the industrial interests which have located along its lines through the city it is practically impossible to abandon such a line, or a portion of it, even if the growth of the city and municipal demands for grade crossing elimination or other city improvements, which such a line is universally subject to, makes the investment so great that the business is unprofitable and a burden to the railroad. As to a railroad company building along a waterfront, even where needed and the financial returns on present cost make it possible, it has been made so difficult by the municipal authorities, and has such possibilities of unlimited burdens being placed on the investment, that such building has practically ceased.

In my opinion, if it had not been for the financial aspect brought on by various causes, which has slowed down advancement and progress in this country the railroads, at the present time, would be unable to handle economically, or at least expeditiously, if at all, all the business which would be offering. Unless rail transportation interests are encouraged by being allowed to earn attractive returns on their present investment as a surety of further returns on the additional capital needed to keep its facilities in pace with our growth, they will not be able to handle the normal expansion of our commercial interests in the United States, particularly at their terminals and ports.

The past history of our ports in a general way, to date, has been that private individuals or corporations have been forced to buy their waterfront, build their piers as opportunity offered and finances permitted, on the prospect of securing a profitable business; in other words, taking the business risk and it is only recently that, to any extent, municipal authorities have begun to formulate plans, or to expend money in carrying out such plans, or to provide more efficient facilities on the waterfront and, so far as I know, even such action has confined itself to buying out going concerns, remodeling and re-renting, and there has been no municipal action which involves the creation of port facilities on undeveloped property, or which approaches in any way the business risk or initiative which has been taken by private individuals or corporations.

To summarize, I have tried briefly to show the community of interests of water and rail transportation; the business handled; the method of handling required; a rational preference of location based on the business handled; the physical and financial requirements under which these interests operate and the influences which affect the rate; that the railroads cannot proceed with the developments of the ports in the future as in the past; that there is a demand for increasing facilities at the cities and their ports to keep pace with the growth of the country; and that municipal development so far has been inconsequential in proportion to the interests involved.

What is the remedy? What can the port authorities do to help the situation? A city should be developed with a due relationship to all its units, of which the port is only one; waterfront property possesses value and gives returns to the community to the extent that it is properly utilized through intelligent supervision,—ownership will permit of such supervision.

Excepting piers for bulk trans-shipment, it is my opinion that piers in cities of a certain class should be publicly owned so that the assignment of piers to private or corporate interests can be decided on the most efficient basis for the necessities of the city, that a belt line should connect a large part of these piers with the industrial zones which grow up around the city.

The problem, however, is not the actual building of the piers or of the belt line, or the money involved, but it is to find a policy to carry out such plans which will not reduce the value of the millions which private and corporate interests have taken in business risks in developing the growth of the city in the past, or, in other words, to punish them for having been a factor in such growth. This is the one great problem of the port authorities of America and the one which should receive your most serious thought, and if you can work out a method of settling this problem with fairness and equity, you will receive the support of all the factors which go to increase the growth of your city. It has so many angles that it would be too lengthy a subject for me to discuss on such an occasion.

There is one other thought which I would like to express to you from a railroad man's point of view. We often hear and read statements that the railroads of most cities have attempted to dominate the waterfront, to limit competition by water carriage, that they oppose the Panama Canal, that they fight the improvements of canals or river improvements, and so on. To my mind, this is the expression of a man with paucity of ideas who builds a house of cards to knock down. From the very nature of things any improvement of our transportation facilities of any kind whatever, water, electric lines, trolleys, motors, improvement of our rivers, etc., cannot but help but increase inherently the amount of rail transportation.

It may be that there may have been criticism of the economic aspect of Government assistance to water interests, that the amount of business encouraged did not compensate for the cost, but in my opinion, any antagonism or criticism of any such undertakings, per se, does not represent the mental attitude of the men who are the brawn, sinew and brains of the railroad interests.

The purposes of your Association are entitled to support. Any relief of congestion in the cities which the port authorities can bring about should be welcomed and assisted in any way possible, and I wish you a full measure of success.

Moving the Kansas Wheat Crop

By A. DeBernardi

General Superintendent, Western District, Missouri Pacific Railway.

Note:—The following article appears in a recent issue of the "Agents' Bulletin" published by the Missouri Pacific. As the Kansas wheat crop for 1914 was almost double that of the greatest previous year, the manner in which it was handled by the great transportation interests of that state is of more than usual interest. The article very clearly emphasizes the importance of the railroad to the farming community and the difficulty of the transportation problems facing the carriers in promptly handling our enormous crops.

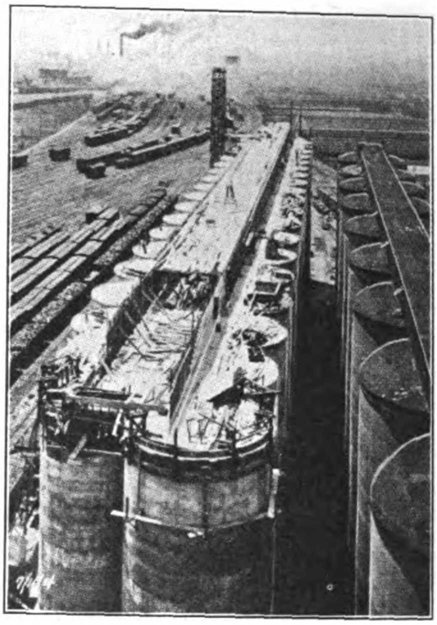
THE Missouri Pacific Railway operates 2,384 miles in Kansas, all but 204 miles of which forms a part of the Western District. It will be seen by reference to the accompanying map that our line lies tributary to almost every important wheat-raising county in the State.

Following almost a total corn failure in Kansas in 1913, a large majority of the farmers turned their attention to the sowing of winter wheat, consequently the acreage was unusually large. After a most favorable fall and winter, it became apparent early the past spring that producers, as well as the carriers and elevators, would be called upon to handle the most gigantic wheat crop in the history of this section. Then all concerned at once proceeded to prepare for the task. The most optimistic did not however realize the magnitude of the crop.

The railroads, early in May, began to repair their engines and cars. Cars were assembled on every available siding in the wheat belt, until, it is estimated, there were 30,000 awaiting the movement. Harvesting machines of all kinds could be seen in almost every freight train, and the call for labor which had been advertised to the four boundaries of the United States was followed by a tide of immigration 50,000 strong. Farm laborers utilized the space in all passenger-carrying trains, while the less fortunate among them became a menace and nuisance to the freight trainmen by riding in and upon freight cars. Many tramped upon the railroads and highways. Numerous college men and high school boys, who were attracted by the high wages offered, were unable to endure the intense heat of the Kansas sun. A large number were without funds, so it was necessary for the people of Kansas to provide means for keeping them until their services would be required in the wheat fields. One small town on our line kept one thousand men for three weeks, turning over to them the City Park, where they retired at night upon "Nature's Sleeping Porch" and devoured "three squares" a day at the expense of the city.

In some instances farmers came to hire the men in person, while in others the merchants, with whom they traded, selected the men and assigned them to the fields where labor was plentiful. Wages varied from $2.50 to $5.00 per day, the higher rate being paid for stackers.

When harvesting commenced, somewhat earlier than usual on account of the favorable season, we were anxious, as were our officers at headquarters, as to the extent of this already famous crop. When our agents in some of the large producing counties advised that threshing was in progress and wheat yielding thirty to thirty-five bushels to the acre, we asked for confirmation of these reports only to find that in many cases the yield was even larger than stated. It is now a matter of record that the State as a whole has produced an average of 20.3 bushels to the acre.



Top View of Kansas-Missouri Company's Grain Elevator Nearing Completion.

This elevator contains fifty large round bins and nineteen interstices; or bins between the large round ones.

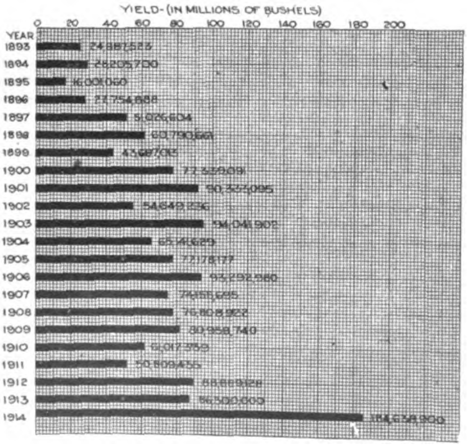


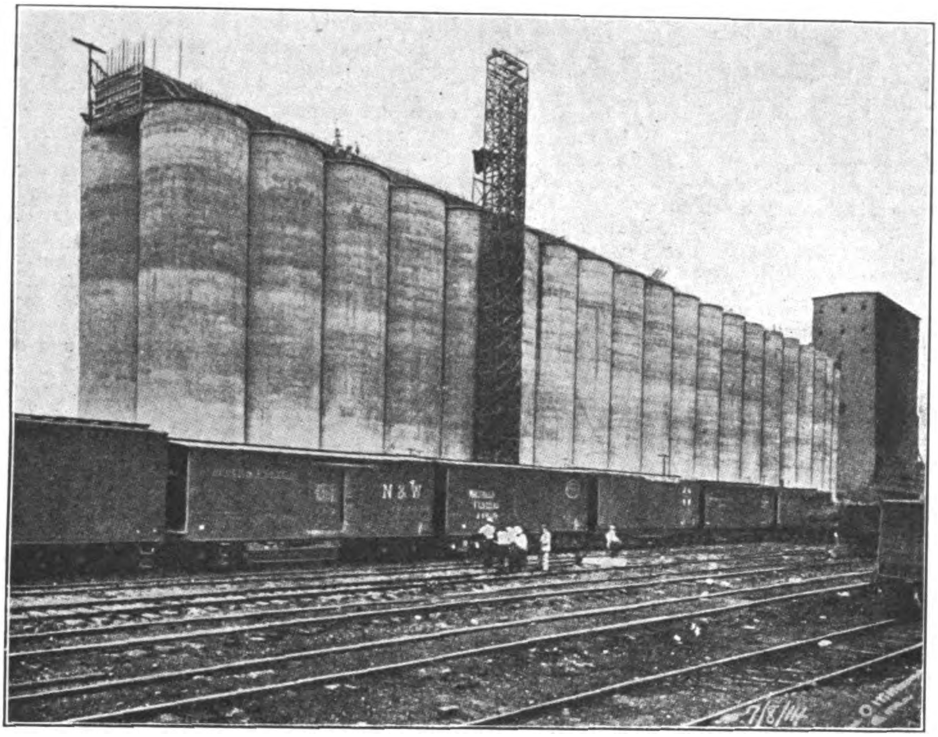
Chart Showing the Wheat Yield of Kansas for a Series of Twenty-two Years.

The map referred to shows the acreage and estimated yield in each county, and those familiar with the State of Kansas will, no doubt, be surprised to know every county in the State produced some wheat even the western tier, known as the "Short Grass Country."

For comparison I am giving below the wheat yield in bushels in Kansas for twenty-two years, from which it will be seen the estimated crop this year is almost double that of the greatest previous year, 1903.

The estimated crop this year would fill 184,639 cars of one thousand bushels each, and make a train one thousand four hundred and eighty miles long, requiring six thousand engines to move it. This train would reach from Salt Lake, Utah, to St. Louis, Mo. Running ten miles per hour, it would require more than six days to pass a given station.

In the eastern part of Kansas, harvesting is done principally with binders, which cut the wheat close to the ground, and tie it into bundles. The machines are followed by a sufficient number of men to place the cuttings into shocks of about twelve sheaves each. In the western part of the State, grain is cut with headers, which take heads and only sufficient straw to insure getting all the wheat, leaving the larger part of the straw standing. The header is accompanied by wagons equipped with large boxes,



ANOTHER VIEW OF THE KANSAS-MISSOURI COMPANY'S NEW ELEVATOR.

Located on the Missouri Pacific tracks at Kansas City, Mo. Total capacity 2,173,000 bushels. Construction, Monolithic. Handles 20,000 bushels per hour.

called "barges" for catching the wheat as it comes from the header.

If the market is favorable, the grain is generally threshed from the shock as fast as possible. This year, on account of the immense crop, threshing could not be done promptly and a large amount of the grain was stacked. Threshing closely follows harvesting, and is usually done by contract, threshers hauling bundles of wheat from the field to the machines and farmers hauling it from the machines to bins or shipping points. These contract outfits consist of engine, separator, cook-wagon, and crew to operate. The charge for threshing varies somewhat, the average being about eight cents per bushel. Wheat is hauled to the market in bulk by wagons, the carrying capacity of which is about sixty bushels.

The cost of production and delivery to the railroad is estimated at about 53 cents per bushel.

The crop, even at 70 cents per bushel, would yield to the producers approximately $129,245,200—a strong argument in favor of the "Back-to-the-Farm" movement.

At each station will be found one or more elevators equipped to handle from one thousand to ten thousand bushels per day, and with a storage capacity twice as great. Wheat is usually sold to dealers located at elevators, who test the grain for weight, moisture, etc. Adjacent to the elevator is a scale on which the grain is weighed. It is then dumped from the wagon into a pit, from which it is elevated by power of gasoline engine and deposited in the elevator bin. After that, it passes out through a spout to a car on an adjoining track. There are eleven hundred of these elevators in Kansas.

The movement of wheat depends upon prices. Competition is very sharp and the local elevator operator must receive quick advice of every fluctuation in the market. At the close of this harvest, wheat was commanding a fair price consequently it began to move rapidly there being as much as two million bushels in transit in one day on the various railroads of the State. The market soon slumped, however, owing to the enormous yield. The first advice of the European war caused another sharp advance and increased deliveries, which continued until the ports became congested and finally blocked on account of the heavy movement and the lack of shipping facilities caused by the strife. This stopped all loading and movement, except to the flour mills and storage elevators.

The question uppermost in the minds of railroad and business men is: What has become of all the wheat? From the best figures we are able to obtain, only about twenty-five per cent of the crop has moved from the producing sections. The remaining seventy-five per cent is stored in private elevators, granaries and bins, with a large percentage stacked and not yet threshed. One Kansas City manufacturer this year sold sufficient bins to store five million bushels. These metal bins can be seen in the fields in all parts of the State. Wheat is also stored in silos or in bins in the fields, covered with tarpaulins, and sometimes even in the attic or on the floor in the guest's bed-room of the farmhouse.

It is estimated by the Agricultural Department of the State that about nine million bushels will be used for seed and fifty million bushels milled by the 500 mills of Kansas, leaving about eighty million, almost equal to any previous year's crop, yet to be moved out of the State. This, in my opinion, will move more gradually in the future, dependent largely upon the duration and result of the European war. Many grain men, including farmers, believe wheat will be worth $1.25 per bushel next Spring if the war continues. They will hold a great deal of their grain for this anticipated advance, which, I believe, will be of great benefit to the carriers, as it will largely overcome the much-dreaded car famine.

The Kansas farmers have become imbued with the spirit of "Safety First," and most of them have provided themselves with storage capacity, the wisdom of experience having taught them that to congest the market inevitably means to lower the price of their product. Wichita, Coffeyville and other large cities of the State are equipped with modern elevators, and at Kansas City the total capacity of all elevators is about seventeen million bushels. The accompanying cut shows one of the largest and most modern. It is located on the Missouri Pacific Railway at Kansas City, and, with additions just completed, has a capacity of 2,137,000 bushels.

It may not be out of place to mention here the railroads' part in the movement of this crop. It consists of hauling empty cars many hundreds of miles, at heavy expense, so they may be available where and when needed. The transportation companies must pay per diem or car hire for those owned by other roads. They must also switch cars to the elevators for loading, move them from the elevators and switch them into trains, furnishing motive power and trainmen to move the entire distance from the point of shipment to destination, including the passing through various yards where cars must be rehandled and inspected. At destination, Kansas City for example, the cars are switched upon special tracks for inspection by representatives of the State and Board of Trade, and are then hauled to an elevator, or other designated point, or taken into the train yard for re-consignment and forwarding.

The shippers and elevator people, realizing the delay to car equipment in its ordinary movement, I am pleased to say, have co-operated with the railroads and assisted us materially in keeping cars moving, **which is the best known cure for car shortage.**

We have also made clear the necessity for loading cars to their full physical carrying capacity. There is a gain of the use of one car in every ten cars so loaded, which in the movement of this crop would mean a total gain of 18,460 cars.

Wood Frame Cars in Freight Trains of To-Day

By G. E. Smart

Master Car Builder, Intercolonial Railway.

A FEW years ago the thirty ton all-wood freight car was considered standard, but since the introduction of steel in car building it has replaced wood and to-day we have all steel coal cars, all steel box cars, lined with wood inside, and steel underframe cars, of all classes of 40 and 50 tons, and a few of 75 tons capacity.

There are a large number of wooden underframe cars still in service, and the question in regard to these is: "What can be done to make this class of car safe to be handled in the long trains and meet the severe usage that they receive in yard switching service to-day?"

The draft gear problem is certainly the most important. The annual cost of repairs to cars that are damaged through the draft gear failure, and loss and damage claims resulting therefrom exceed all other repairs made to freight car equipment. The question naturally arises: "What are the causes of these failures?"

They are as follows:—

First. On account of introduction of heavier power and longer trains.

Second. Placing of light and heavy cars together in trains.

Third. Rough switching of cars in yard.

With regard to the first and second causes:

The tractive power of locomotives has increased during the last few years from 20,000 lbs., known as the 100 per cent engines to about 45,000 lbs., or 225 per cent for locomotives in general use in Canada, and the 2-10-2 type used on American roads to 84,000 lbs., and in addition to this type there are in use on certain sections of the country, locomotives of the Mallet type, with tractive power of 110,000 to 120,000 lbs., and, notwithstanding this enormous increase, there is a type of locomotive just placed in service, known as the Erie Triplex, with a tractive power of 160,000 lbs., with a haulage capacity equivalent to a train consisting of 250 fully loaded cars each of 50 tons capacity, 1.6 miles in length and a total weight of 18,000 tons. On comparing trains of the present day with those of a few years ago, the average number of cars hauled being 25, or approximately 1,000 feet long. To-day the ordinary trains are 60 to 100 cars, and a train of 100 cars would be approximately 4,000 feet, or about ¾ of a mile long.

What chance has a wood frame car under the conditions as they exist to-day on the front end of such a train? In my opinion it is a very good reason why cars of this class are so often found on repair tracks, if a car of this type was to be traced from the time it leaves the terminal it would be found that it was necessary to remove parts of the load quite often, which beside the expense of repairs results in delay to freight en route, and it is the fruitful cause for so many claims on account of damage to freight handling in and out of the car.

The solution of the problem is not altogether the physical characteristics of the car or entirely

Foot Note:—From an address delivered before the Canadian Railway Club, on Oct. 13, 1914.

mechanical. The operating official should co-operate with the Mechanical Department in reducing the freight car repairs by arranging as far as possible that cars with all steel construction or with steel underframe, or those with steel centre sills be placed in the front end of the trains. It is a fact that we find light capacity cars with wood underframe or empty flat cars leaving the terminal on the head end of one of the long trains. And in the majority of cases the cars are billed through and will not be set off between terminal points, unless set off on account of draft gear failure. This, no doubt, could have been avoided had the cars been placed towards the rear of the train before leaving the terminal.

There are railways who recognize the necessity of placing weak cars toward the rear of the train, and they provide cards stating that they must not be placed more than fifteen cars from the caboose. This indicates that the car is in such a condition that it must be so located in the train, but is safe in ordinary service to be hauled to destination, and if this is done delay and extra switching on account of draft gear failure along the line would be eliminated, and it would not be necessary to move the lading on account of this feature.

The third cause: "Rough switching in yard, is a great factor in car repairs."

The speed limit for switching in yards is nil, nor are there any rules in force governing the speed of locomotives in switching service.

If you were to confer with the Car Inspectors and obtain their opinion as to where most damage is done to cars, I am safe in saying that their answer would be in the switching yards, as their daily experience in inspecting cars immediately on arrival and after they have been switched in yard will confirm this. This is only a small item as compared with actual damage started in yard and which through the cars being necessarily weakened thereby, is aggravated after leaving terminals, and results in many cases in the cars breaking down before reaching destination.

A visit to the freight car yard will convince you that it is just a question how fast the cars can be switched together, the speed that the cars are traveling is not considered, hence cars are found buckled up in yards and the draft gear lying around, same having been pulled out due to rough switching.

There should be some speed limit in yards to prevent this destruction of equipment. The time lost in switching out bad order cars damaged in yard and taking same to repair track would often offset the time gained by excessive speed that cars are switched together. The cost of repairing these cars must also be considered, and the thousands of dollars of damage done to the contents of cars in yard that are not set off for repairs.

What is the Mechanical Department doing to-day to overcome these troubles?

First. They are building steel frame cars to certain specifications with stronger types of draft gear.

Second. Applying steel underframe or steel centre sills and steel ends, or otherwise re-inforcing the ends of cars to withstand the heavy shock.

Third. Applying different types of steel draft arms to the present wood centre sills in such a manner that it re-inforces the wood centre sills, thus greatly reducing the cost of strengthening up the draft gear.

Fourth. Applying heavier types of couplers and draft gear, and using friction draft gear, for in the past very little attention has been paid to what type of draft gear the cars were equipped with, but the friction type of draft gear is now being used to a large extent.

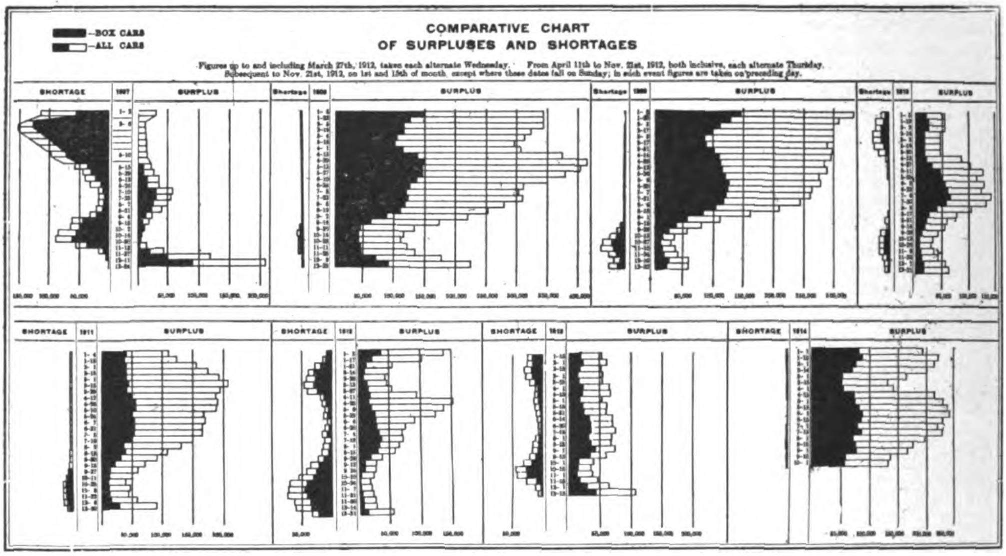
The demands of modern railroading requires the stopping of a high speed train in about two minutes and the draft gear is expected to absorb the shock. The Air Brake Department can help to eliminate the strain on the draft gear by instructing the engineers as to the proper method of handling the long trains. The principal thing is to control the slack to prevent it from running in or out harshly. Slack in draft gear cannot be prevented as it is due to compression of the springs, and the heavier the locomotive and the longer the train, the greater the care that is required. Engineers are instructed in the air brake construction car how this should be done, but the general air brake inspector should see to it that the rules are followed out in actual service.

The vital question to-day before the Car Department is how to keep these wood underframe cars in service. The majority of the railroads are destroying the 40,000 lb. cars, but the 60,000 lb. and 80,000 lb. cars that were built with wood underframe and short draft timbers are not any stronger and cannot withstand the heavy service and severe yard conditions of to-day, and unless the Operating Department will assist in reducing the damage done to cars and thus reduce freight car repairs, and also keep the cars in service by marshalling this class of car on the rear end of the train, and exercising greater care in switching cars in yard, the cost of freight car repairs will increase and the repair tracks will be full of bad order cars. The only other remedy is to spend money to apply steel centre sills or steel draft arms, so arranged as to strengthen the present wood centre sills, and in addition to this re-inforce the end of this class of cars. But yet the strongest car built cannot withstand the severe usage received in yard switching operations of to-day unless more care is exercised on the part of the yard crews.

Operation

Latest Report on Car Situation.

THE latest report of the American Railway Association shows that the total number of idle cars on October 1, 1914, was 133,383 against 138,108 on September 15, 1914 and 41,994 on October 1, 1913. While there has been a steady decline in surplus equipment since the first of July, it has not been nearly so rapid as during 1913, as the latest comparative figures indicate. At the present time there are approximately 100,000 more cars idle than there



was on the corresponding date of last year. It is reported that the reduction in surplus cars is about equally divided between box, coal and miscellaneous cars, there being little change in the flat car surplus. Generally, unsatisfactory traffic conditions are reflected in the fact that not during the past decade has the number of idle cars for October been so large as it is at the present time.

New Commissary of the Southern Pacific at Los Angeles.

THE Southern Pacific Company has just completed at Los Angeles, one of the most remarkable commissaries in the world. It is dust-proof and fly-proof. The sun can never touch the perishables. Provisions are weighed, iced, sorted and issued without once having been touched by human hand. Liquids are delivered in sealed glass containers and cream is moved in gallon tins that, once used are thrown away, thus insuring dining car patrons a product free from contamination. It boasts a humidor, measuring ten by four feet with a capacity of 40,000 cigars. And in its sanitary protection, there is even provided a special concrete-lined refuse room, where garbage, pending incineration, is immediately placed under refrigeration.

ALLAN POLLOK.

Superintendent of dining cars, hotels and restaurants, Southern Pacific Company.

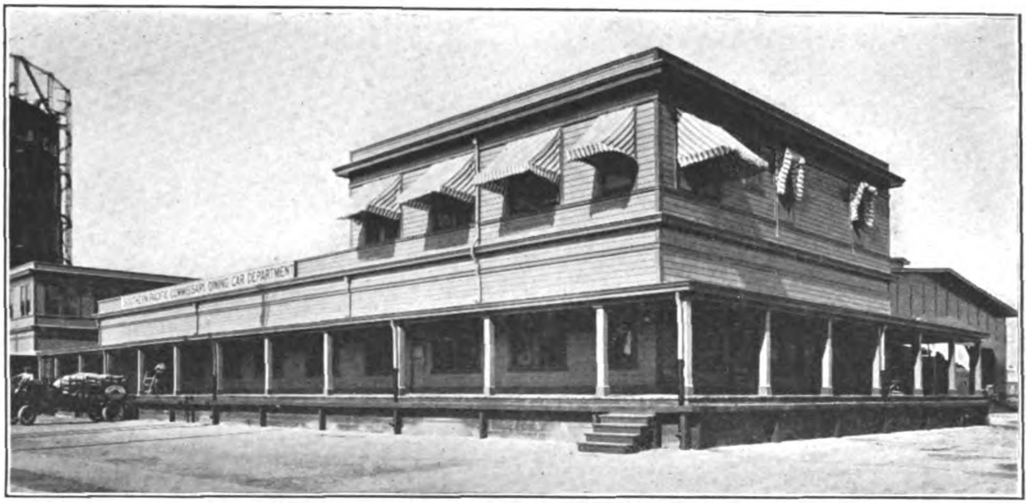
One hundred thousand dollars went into this commissary, which is located two blocks south of the Arcade depot. The center of the building is one story in height, the south end, two stories. Covered platforms surround the entire structure. They are provided with water, compressed air and steam—the three big factors in preserving the spotlessness of the place. At the rear, are five tracks whereon the dining cars, returning at the end of each trip, are cleaned, scoured and scrubbed. Water, steam and compressed air, with which the tracks are equipped, are used in giving the big cars their baths, and lest any dust escape to the platforms, vacuum cleaners are used.

As soon as the diners arrive, they are at once placed on these tracks and inspected before the crews leave. Perishables are removed, ice boxes and lockers thoroughly cleansed, and all kitchen utensils, such as coffee urns and filters, are taken away to be sterilized.

The general plan is so arranged that commodities move always in one direction from receipt to delivery. The issue of supplies from this commissary alone, aggregates between $40,000 and $50,000 in purchases a month. And this figure applies only to the southern district, which extends from Los Angeles north to Fresno and Santa Barbara, and south as far as New Orleans.

All purchases are made locally, where possible, this being in line with the company's policy. In this connection, the company always aims to furnish the first products of the season, especially fruits. Southern Pacific diners yearly carry the first canteloupes from Imperial Valley, the first figs from India, etc.

Combined with the big kitchen, which is di-



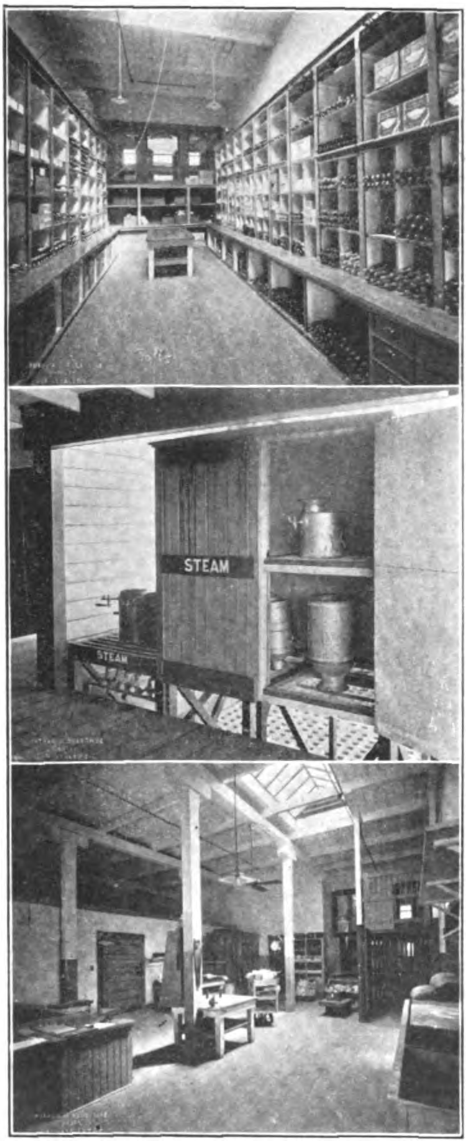
SOUTHERN PACIFIC'S NEW COMMISSARY DEPARTMENT, LOS ANGELES, CAL.

rected by Mons. Doriel, a widely known chef, there is a cooking school where the dining car cooks are given a chance to show their individuality in the final preparation and serving of stock materials. Meats go from the butcher shop to big refrigerators, and when required, go to the diners in especially constructed, highly aluminized and covered trucks. The grocery room, refrigerators, linen rooms, main offices and assembly rooms for the crews all boast unique features.

The exterior of the building is thoroughly in keeping with the interior in sanitation and cleanliness, the moral effect of cleanliness on the crews not having been overlooked by Superintendent Allan Pollok, of the dining car, hotel

PUTNAM & VALENTINE
PHOTO
LOS ANGELES, CAL.

KITCHEN OF SOUTHERN PACIFIC'S NEW COMMISSARY DEPARTMENT AT LOS ANGELES.



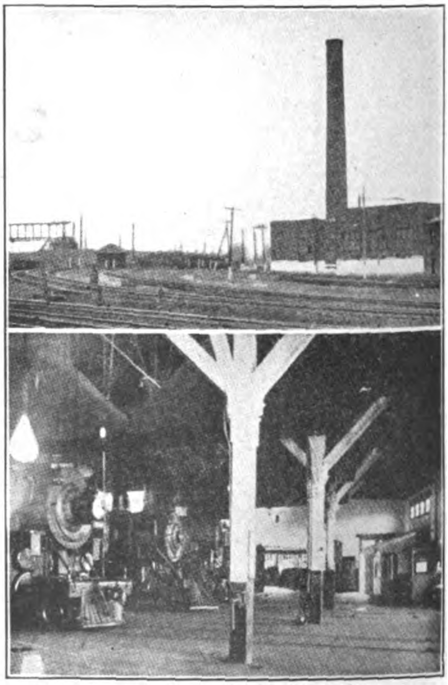
Beverage Department, Steam Sterilizing Device and Receiving and Distributing Room of the Southern Pacific's New Commissary Department at Los Angeles.

and restaurant department. Working in an atmosphere of cleanliness, they naturally maintain a higher standard of carefulness themselves.

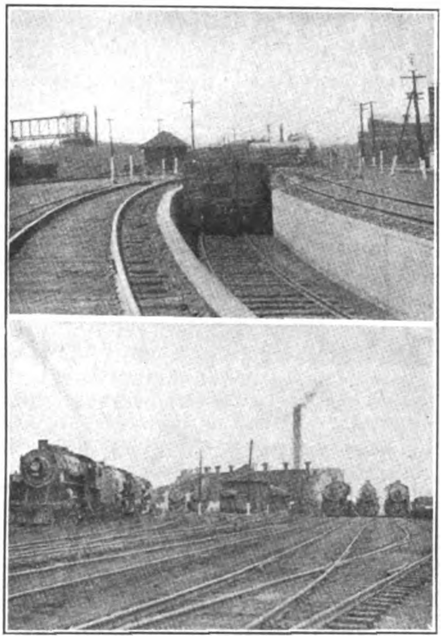
A Model Round House.

ONE of the most striking illustrations of what can be done in the interests of safety and efficiency may be observed by an inspection of the roundhouse at East Syracuse, N. Y., on the New York Central. This roundhouse, situated on the main trunk line of the road, and adjacent to one of the large yards of the system, is naturally a busy place. There are from 115 to 150 engines handled there daily. But in spite of this fact, the entire plant is a model of cleanliness, order and safeness. The plant is in charge of F. J. Wiegand, General Foreman.

A person visiting this plant is at once impressed with the order and cleanliness that prevails. The roundhouse floors, shop floors and the grounds surrounding the roundhouse and other buildings are all kept clean and you do not see any material, tools or articles of any kind lying about that a person might stumble over. Neatness is the feature throughout. Safety First signs are conspicuously stenciled about the place, but the Safety First idea is in evidence not alone in these signs, but in every day practice as well. For instance: There is a man in charge of the tool room, who is held responsible for the condition of all hand tools, jacks, ladders, etc. His duty is to inspect all tools once a week, taking any that are defective, such as hammers and chisels with burred heads, out of service and not allowing them to be used again until they have been put in proper condition. Goggles are supplied to all men engaged in chipping and grinding and they are required to sign a book each morning before they start to work, stating they have the goggles in their possession. In the Machine Shop all machines are well guarded and employes are not allowed to operate a machine with their clothing in a loose or baggy condition. All manholes and clearances are properly protected and floors, walkways, etc., are kept in fine repair, there being no holes or obstructions of any kind in evidence. Alongside of the ash pits are racks erected for the purpose of holding rakes, slash bars and shaker levers and strict attention is paid to keeping the tools in this rack when not in actual use. The electrically operated turn-



Upper Picture Shows General Neat Appearance of East Syracuse Plant. Lower Picture is an Interior View of East Syracuse Engine House. No Loose Material Lying on Floor.



Upper Picture Shows Stop Signals for Track Leading to Turntable. Lower Picture Indicates Some of the Power Handled at East Syracuse. Clean Condition of Ground is Particularly Noticeable.

table has starting switches enclosed with proper guard and there is a standard railing on table. Turntable stop signals are erected forty feet from the turntable and no engine is allowed to pass these signals and go onto the table until a full stop is made and signal to proceed given by turntable operator.

Alongside of the old roundhouse a new modern house has been erected containing the most modern system of lighting, heating and ventilating. However, one is impressed with the fact that even the old roundhouse looks as clean, neat and free from unsafe conditions as the new and modern house next to it.

The outer wall of the roundhouse for a distance of several feet from the ground has been whitewashed, which adds to the general neat appearance.

Safety Developments on the Santa Fe.

THE Safety Commissioner of the Atchison, Topeka and Santa Fe Railway System, Isaiah Hale, has recently prepared a comparative statement showing the number of personal injuries to employes of that system during the fiscal years ending June 30, 1913 and 1914. In brief, this statement shows a reduction of accidents in practically every branch of the service, the total number injured for 1914 being 12,107 as against 13,421 for 1913, a difference in favor of the greater safety movement of 1,314. The reduction in the number killed by a similar comparison was 37, the total number of employes meeting death in 1914 being 66 and in 1913, 103.

In connection with this reduction it should also be noted that during the last fiscal year, a number of minor injuries were reported and recorded, of which in former years, no record was made, so that, as a matter of fact, the beneficial results of the Santa Fe safety campaign have been even greater than the comparative statement indicates.

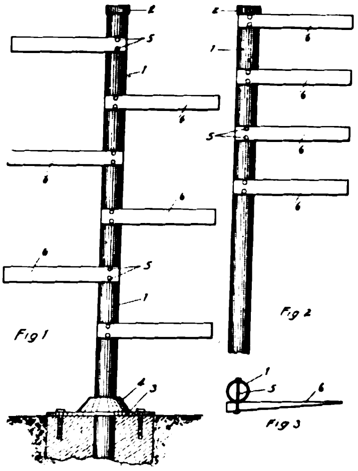
According to Mr. Hale, the work now ahead of the Safety Bureau, is to make employes realize that the final analysis shows that the real gainer is not the railway but the individual employe. While, according to the figures quoted, the Santa Fe has an additional 37 loyal employes which might not have been living, the greater benefit rests in the fact that the same number of mothers still have their sons, wives their husbands, and probably several times that number of children still have their fathers. In this result the safety movement ranks among the greatest humanitarian efforts of the age.

Southern Pacific Conductor Invents New Safety Device.

CONDUCTOR WILLIAM SCHWAB, of the Sacramento Division of the Southern Pacific, to whom was awarded the bronze, or employe's medal, replica of the Harriman Memorial Gold Medal, last year bestowed by the American Society of Museum upon the Southern Pacific System for its splendid record in accident prevention, has invented a new railroad safety device, which is to be exhibited by the Museum.

The device is a side-clearance "tell-tale" for the purpose of warning railway employes riding on side ladders of box cars or on steps of coaches of dangerous obstructions ahead of the train in time to avoid being injured thereby.

It consists of a pole erected on the side of the main track, between double railroad tracks or between main tracks and sidings, and having several horizontal flexible arms extending toward the track. While giving trainmen warning by striking their persons, the flexible arms of the "tell-tale" do not injure or bruise them in any way. A single form having arms extended from one side only is used when the device is to be placed only alongside the main track.



Side-clearance "Tell-tale" Device Invented by Southern Pacific Railway Conductor.

Pennsylvania Railroad Awards Prizes for Roadbed Maintenance.

THE Pennsylvania Railroad has awarded $5,400 in premiums for the maintenance of sections of roadbed in the best condition during the past year. The Special Committee making the awards consisted of W. G. Coughlin, engineer of maintenance of way, chairman; A. B. Clark, assistant engineer of maintenance of way, in charge of roadway and track; J. J. Rhoads, superintendent of the Media Division, and N. J. Cleave, superintendent of the Cresson Division.

The first premium, that of $1200, of which $800 goes to the supervisor and $400 to the assistant supervisor having the best line and surface between New York and Pittsburgh and Philadelphia and Washington, was awarded to C. M. Wisman, supervisor and H. M. Grimm, assistant supervisor, who have charge of the track between Tullytown, Pa., and Deans, N. J. The other prizes were:

Four premiums of $800 each—$600 for the supervisor and $200 for the assistant for the best line and surface on a main line superintendent's division between New York and Pittsburgh and Philadelphia and Washington, awarded as follows:

C. Z. Moore, supervisor, C. L. P. Russell, assistant supervisor, in charge of track between Dillerville and Harrisburg, Pa.

W. T. Hanly, supervisor, J. B. Baker, assistant supervisor, in charge of track from west of Rockville Bridge to Thompsontown, Pa.

W. S. Wilson, supervisor, C. W. Barwis, assistant supervisor, in charge of track between Altoona and Portage, Pa., including the "Horse Shoe Curve."

G. H. B. English, supervisor, C. M. Hurah, assistant supervisor, in charge of track between Wilmington, Del., and Perryville, Md.

A special improvement premium of $1000—$700 to the supervisor and $300 to the assistant, for the greatest improvement made in line and surface on the main line between New York and Pittsburgh and Philadelphia and Washington, was awarded to A. W. McClellan, former supervisor and assistant supervisor H. L. Pierce, for the section of track between Donohoe and Wilmerding, Pa.

Norfolk and Western's Safety Leaflet to Employes.

THE Norfolk and Western has recently had prepared a safety leaflet for general distribution among its employes under the caption "Remember it is Better to be Careful than to be Crippled." The full statement contained in the leaflet is as follows:

During the year 1913, more than four thousand five hundred employes of our line were killed and injured.

Consider this statement carefully and then ask yourself squarely, the question: Who should be most interested in the prevention of accidents? There can be but one reply: The Men of the Norfolk and Western.

Accidents can, in a great measure, be prevented, and the figures shown above give you the strongest reason to interest yourselves, individually, in the work of prevention. You alone cannot produce the desired result, nor can the Company do so without your support. You can see that the problem must be faced together—that the men and the Company must earnestly and heartily, shoulder to shoulder, work in unison for the preservation of life and limb to employes and efficiency to the Company. For its part, the Management is willing to spend money to correct dangerous conditions and asks you for your part to try to correct dangerous practices and eliminate the taking of risk. The Company wishes you to take its time to do a thing safely, rather than to save its time and take a risk.

The results following these injuries have been:

To the Company: A substantial loss, both in money and efficiency, because whenever an experienced man is killed or injured a green man must be employed who in many cases, while getting his experience, delays work, breaks up equipment and perhaps kills himself or someone else.

To the Men Injured: Pain, loss of wages and perhaps poverty, and life as a cripple.

To the Families of Those Killed: Sorrow at the death of husband and father, distress and perhaps want because of the loss of his earnings.

A little serious thought will convince you that while the Company loses, the burden falls heaviest upon you.

If neither the pain, the distress, nor the cost in money and efficiency appeal to you, perhaps your interest may be aroused by the suggestion that, without accident prevention, you may be the next one—that your children may soon be fatherless and your wife a widow.

Can you afford not to join the Company heartily in its effort to reduce this useless loss of life and limb?

Warning to Passengers.

PEOPLE who insist on standing on the platforms of moving passenger cars place in jeopardy their own lives and the lives of others.

It is the intention of the Pennsylvania Railroad to put a stop to this practice if it is possible. The officers of the Pennsylvania Railroad have even gone to the point of writing a letter to the general managers and superintendents of the various industries around Pittsburgh, requesting them to post notices in their factories, warning employes of the danger of standing on the platforms of moving cars.

The following general notice to passenger trainmen has been posted on the bulletin boards of the Pittsburgh Division:

"Your attention is called to the fact that concerted effort on the part of every trainman is necessary, at once, to keep passengers from riding on platforms or steps of cars between or approaching stations.

"A letter has been sent to all industries, requesting that all employes be warned of the danger and of violations of the rules for safety, by riding on platforms.

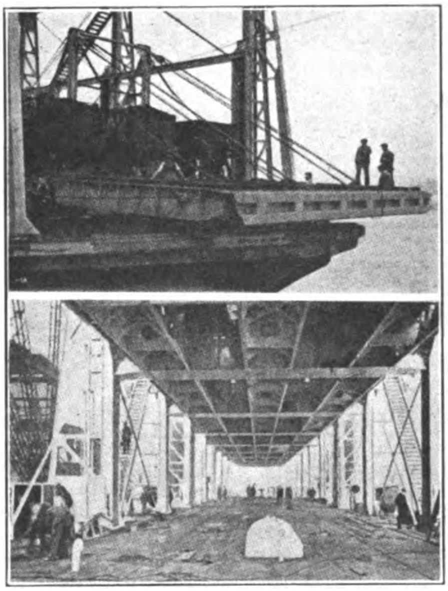
"This practice, now common, will be broken up by concerted action alone. If, in any case, assistance in enforcing the rule is desired, you will report to this office at once."

Mechanical

A Railway Car Ferry of Novel Construction.

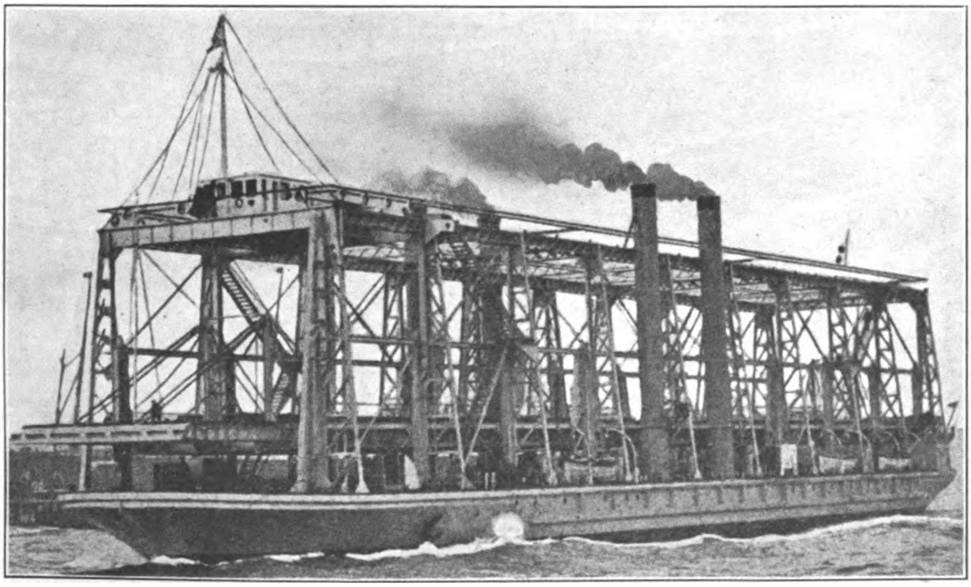
THE accompanying illustrations, for which we are indebted to the "Canadian Railway and Marine World," present a general idea of the new car ferry of the National Transcontinental Railway which is to be employed for conveying trains across the St. Lawrence River, pending the completion of the Quebec bridge. The boat is designed for transporting standard passenger and freight trains across the river at all seasons of the year. The average weight of the trains is estimated at 1,285 tons and the time consumed in making the trip, including both transfers, is about three-quarters of an hour. The river at this point is two and one-half miles wide.

To meet the unusual conditions, several practically new ideas were embodied in the construction of this vessel, which is not only generally strengthened for service in ice but is also equipped with an ice breaking propeller besides twin screws for ordinary propulsion purposes.



UPPER PHOTOGRAPH PICTURES ADJUSTABLE HINGED APRON CONNECTED TO TIDAL DECK BY BALL AND SOCKET JOINTS, WHILE LOWER PHOTOGRAPH IS A VIEW OF MAIN DECK SHOWING TIDAL DECK ABOVE IN ITS RAISED POSITIONS.

The special feature of the design, however, is the movable tidal car deck. As the railway tracks on either side of the river are at a fixed level, the boat, as the illustration indicates, has been equipped with a tidal deck able to take the cars from the fixed track at any stage of the tide, the range being eighteen feet. Ten transverse girders support the deck and each rests on a large nut which works up and down on a vertical screw, giving the deck the necessary range of action. The deck contains three lengths of track each 272 feet long and at each end is an adjustable hinged gangway suspended by means of treble purchases from struts fixed on the deck. These gangways are arranged with ball and socket joints at the ends of each of the girders carrying the rails, to allow for any heel of vessel or change of trim which takes place when loading or unloading the cars. The tidal deck lifting screws are hung from ball bearings supported on strong columns, which in turn are stayed by lattice buttresses against fore and aft and transverse thrusts, while below the main deck a specially strong braced



GENERAL VIEW OF NATIONAL TRANSCONTINENTAL RAILWAY CAR FERRY WITH ADJUSTABLE TIDAL DECK PARTIALLY RAISED.

strut is built, in way of each column, which distributes the load to the keel.

Accommodation is arranged for officers and crew on a flat below the main deck forward on both sides, and everything necessary for full day and night crews is provided. The vessel is fitted with electric light throughout, and an electric winch with two winding drums is fitted between girders of the tidal deck for hauling cars off and on the vessel. Two powerful steam windlasses are fitted, one on each side with slip drums for mooring. A complete installation of auxiliary machinery has been provided and the hull and machinery complies with Lloyd's requirements.

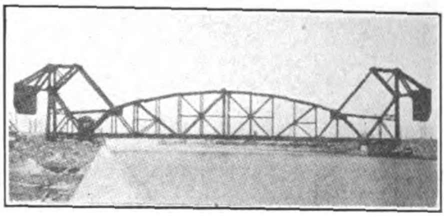
Although it was anticipated that some delay would occur in allowing the vessel to cross the Atlantic, she arrived at Quebec safely, August 18th.

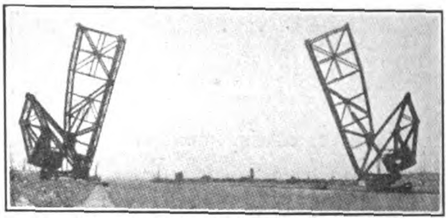
Largest Bascule Bridge in the World.

THE Canadian Pacific has recently finished the construction of a bascule bridge crossing the canal cut recently completed by the United States in Sault Ste. Marie, Michigan, which represents the largest structure of its kind in the world. The bridge is 336 feet in length between centres of main trunnions, each leaf being hinged on a steel tower and counterbalanced on the opposite side of this tower. The counterweights consist of masses of reinforced concrete, each containing approximately 530 cubic yards of concrete weighing 1300 tons. So exact is the balance that only a comparatively light power is required to raise the leaf and lower the counterweight.

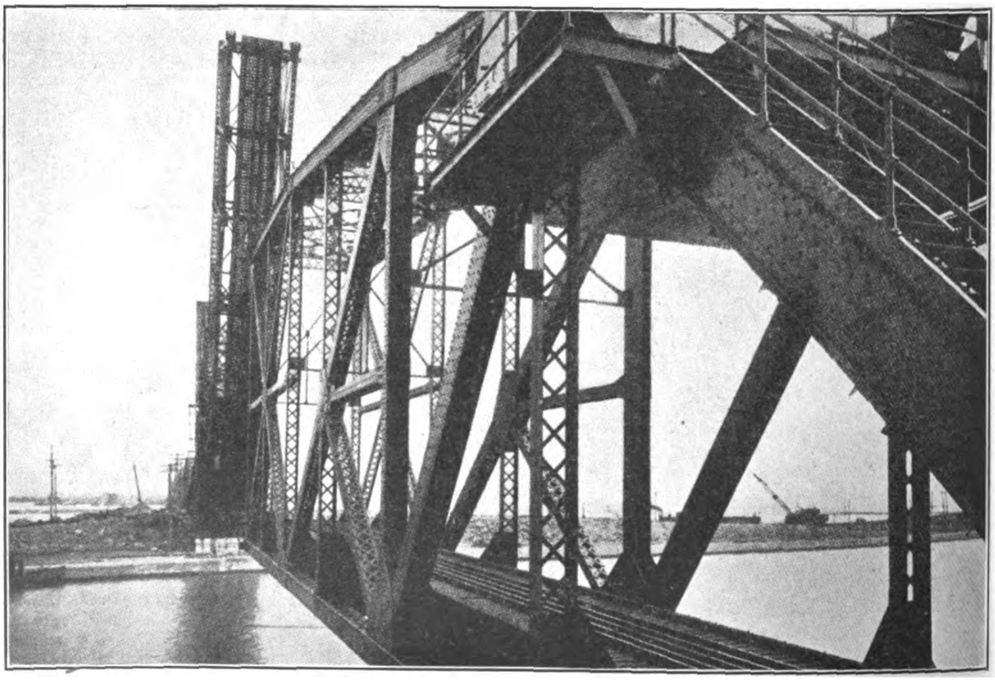
The south leaf and tower are supported on roller bearings, allowing a six inch movement to the entire southern leaf and tower in a longitudinal direction, to permit free expansion from temperature. The operation of this movement, when necessary, is accomplished by an oil pump in such a manner that the entire tower and attached leaf can be moved in either direction so that the two leaves exactly connect.

While it will be necessary to open both leaves for vessels of large dimensions and deep draught, it is anticipated that vessels of lesser draught may safely pass through with one leaf open.





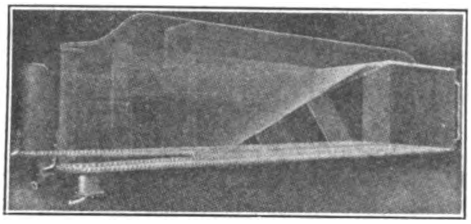
PHOTOGRAPHS SHOWING THE BRIDGE IN CLOSED AND OPEN POSITIONS. THE BALANCE IS SO EVEN THAT VERY LITTLE POWER IS NECESSARY TO OPERATE THE GREAT LEAVES. FOR SMALLER VESSELS IT IS ONLY NECESSARY TO OPEN ONE LEAF.



THE LARGEST BASCULE-BRIDGE IN THE WORLD RECENTLY ERECTED BY THE CANADIAN PACIFIC RAILWAY BETWEEN SAULT. STE. MARIE, MICH., AND SAULT STE. MARIE, ONT.

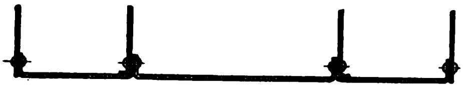
Flanged Locomotive Tanks.

ATTENTION was called in the May issue of the "Railway World" to an improvement made by F. N. Hibbits, superintendent of motive power, Lehigh Valley Railroad, who by the simple expedient of bending a piece of steel, solved the problem of eliminating leaking tender tanks. The Acme Flanged Sectional Locomotive Tank, which has recently been placed upon the market, and which has caused so much favorable comment, is the outcome of the development of Mr. Hibbits's idea. The accompanying photograph gives an excellent idea of the details of this tank and the improvements brought about by the sectional construction.



Phantom View of the Acme-Flanged Locomotive Tank.

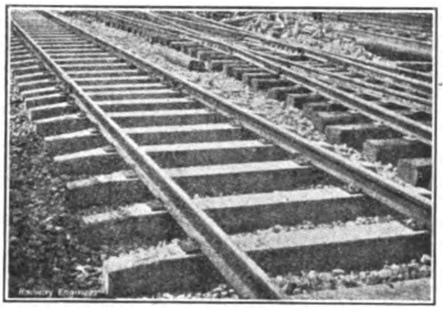
The Acme tank differs from those of ordinary construction in that the latter must be lifted off the deck every time it is necessary to renew or calk rivets or calk the seams, while the entire bottom of the former rests firmly and smoothly on the tank floor or deck and consequently there are no strains by reason of the usual uneven service of the tank bottom. Furthermore, the center section of fan is directly under the water intake, and tends to retain pieces of coal, cinders and sediment passing through the screen, and preventing them from reaching the side fans and clogging the injectors. The construction throughout is strong and simple, and gap riveter is used instead of the "gun" type of riveter in the top and bottom flanges. The complete absence of angle and tee irons, and sharp corners in the interior of the tank, also aids in prolonging the life of the bottom of the tank.



SECTION OF ACME-FLANGED TANK BOTTOM, SHOWING METHOD OF RIVETING SECTIONS TOGETHER.

A New "Sleeper" from Germany.

A NEW railway sleeper patented and manufactured under the name of "Asbeston," has recently been given an experimental trial on the State Railways of Saxony. It is stated that these sleepers have a distinct advantage over those of reinforced concrete construction in that they are said to be as elastic as wood under the rails and can be readily bored so that the ordinary rail fastenings can be employed. Notwithstanding this elasticity, however, it is stated that they must be handled carefully and not dropped or pitched about which, from the standpoint of American railway operations, would appear to offer a very serious difficulty.



"Asbeston" Sleepers Which Have Proved Successful in Experimental Trials in Germany.

They are, however, very highly spoken of by the authorities of the Saxon State Railways, on which they have been laid for more than two and one half years without the fastenings loosening in the least. This last is of course an important point as most wood sleepers are taken out on account of the wood failing around the fastenings. Certified tests made at Liepsig show that while three spikes in wood drew out under a pull of about 3,175 pounds, three spikes in the "Asbeston" sleeper showed no sign of drawing under a pull of 5,512 pounds. When screws were tested the pulls were 7,537 pounds and 7,762 pounds respectively with the same results. The compressive load sustained without cracking was 70,750 pounds.

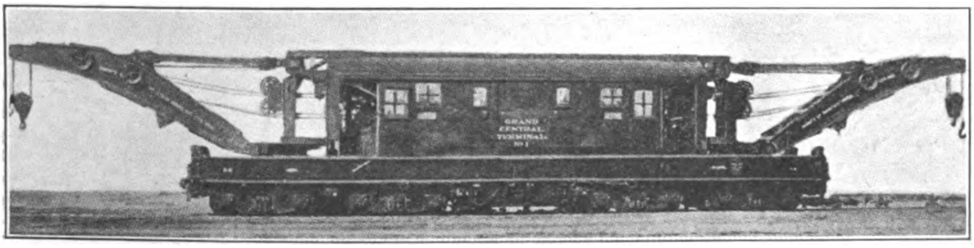
The "Asbeston" sleeper is about three times the weight of a steel or wood sleeper.

The union between the "Asbeston" under the rail seats and rest of the reinforced concrete is said to be complete.

These sleepers are much more costly than either wood or steel sleepers, but it is claimed that this is not a matter of great moment because of the great economy of the maintenance charges and because their life is said to be unlimited.

New Tunnel Crane for New York Central.

A NEW 100-ton tunnel crane has recently been received at the Grand Central Terminal, New York, for use in case of tunnel accidents. The crane is of the double-



New York Central's New Electric Tunnel Crane of 100-tons Capacity.

end variety, electrically operated and is especially designed for the underground clearances and conditions existing in and adjacent to the Grand Central Terminal. It is also adapted, however, for use on the main line of the electric division and can be dispatched at high speed under its own power to the scene of an accident anywhere on this division. In other words, it combines the function of a crane with those of a high power electric locomotive. The accompanying illustration gives an excellent idea of its general appearance.

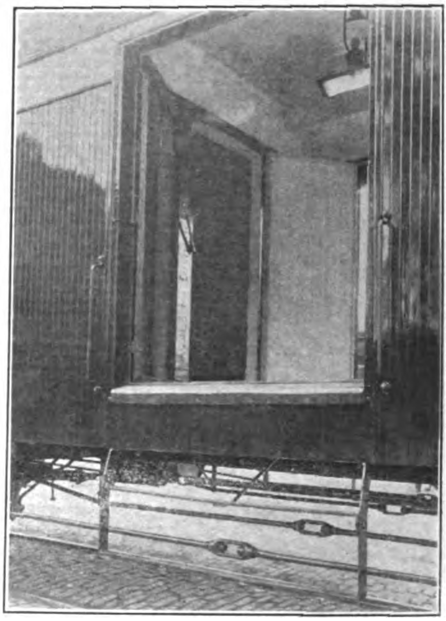
The Installation of Modern and Sanitary Dairy Refrigerator Cars by the Baltimore and Ohio.

ADVANCED steps in the interest of public health have been taken by the Baltimore and Ohio Railroad with the placing of four modern and sanitary dairy refrigerator cars in service to handle milk daily between points in Ohio and the Pittsburgh market.

The new cars which were built in the Mount Clare shops, at Baltimore, according to specifications approved by the United States Department of Agriculture, will insure the arrival of milk in Pittsburgh at a temperature of 45 degrees from the creameries at Ravenna, Newton Falls, Chardon, East Claridon, West Farmington, Painesville, Chicago Junction and intermediate points after a run of five hours. All possibility of the growth of bacteria while milk is in transit is removed, health authorities and railroad officials stating that the new cars will retain their uniform temperature for 48 hours with but one icing when the thermometer registers 90 degrees.

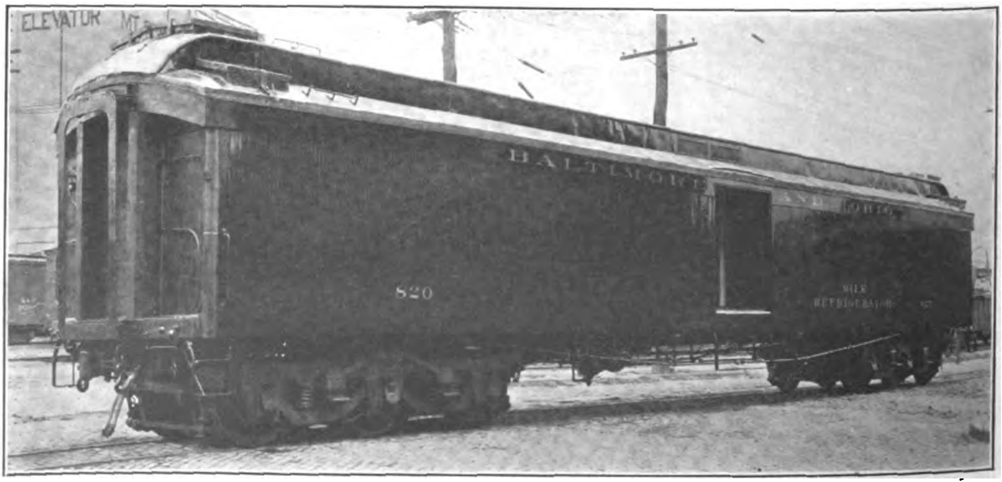
The interior finish of the cars is of white enamel, affording every precaution against the harboring of germs and in harmony with the general cleanly appearance. The cars are the same type of appearance as postal cars, being 60 feet long and so constructed as to provide practically hermetical sealing, which is essential in the hauling of milk for long distances from dairy regions to central markets.

"Milk Refrigerator" is lettered on their sides in gold leaf. The cars have double floors of yellow pine and covered with "flexolith," the most improved sanitary floor covering in use. The material permits of a thorough flushing of the cars in cleaning the equipment.

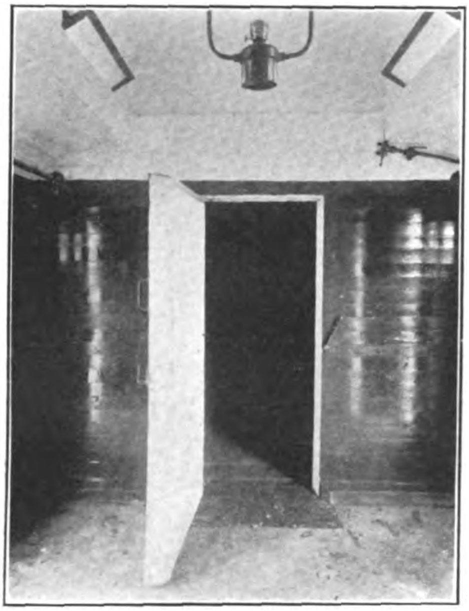


INTERIOR VIEW OF PASSAGE-WAY BETWEEN BULK HEADS SHOWING DOORWAY INTO REFRIGERATOR COMPARTMENT ON LEFT HAND SIDE.

The cars are designed for brine refrigeration and represent the highest development in scientific refrigeration of milk. In each end are ice bunkers, extending from floor to roof, containing six brine tanks in which are carried ice and salt. Two bulkheads five inches thick with refrigerator doors, are built across the cars on each side of the center doorways, thus creating two cold storage compartments with a floor space of 176 feet each and with capacity for thirty ten-gallon cans.



NEW SANITARY MILK REFRIGERATOR CAR OF THE BALTIMORE AND OHIO.



INTERIOR VIEW OF BALTIMORE AND OHIO REFRIGERATOR MILK CAR SHOWING DOORWAY THROUGH BULKHEAD INTO REFRIGERATOR COMPARTMENT.

Locomotive Arch Brick.

AT the September meeting of the Central Railway Club, Mr. George Waystaff, of the American Arch Company of New York City, delivered an interesting address upon the locomotive arch brick. After describing the varieties of clays employed in the manufacture of these bricks and the various processes involved, he said:

"It is estimated that there are at present in the United States and Canada between 29,000 and 30,000 engines equipped with fire brick. Of this number, about 19,000 have tube supported arches, between 7,000 and 8,000 have stud supported arches, about 3,000 are oil burners, and about 127 have the Gaines combustion chamber. Of this latter, 74 are the straight wall type, and 53 are the locomotive furnace engines, or wall and Security Arch type.

"The Gaines locomotive fireboxes with combustion chambers are developing nicely, 127 locomotives being in actual service and equipped with various designs of this device, reports to date being very encouraging. It looks as though this device has come to stay and will have a brilliant future.

"This is not recommended to supplant arch tubes and sectional brick designs. There are a large number of locomotive fireboxes with very little throat depth at front end, and the bottom row of the fire tubes are so close to the top of the grates that it is not practicable to apply arch tubes and arches. This improvement is in its experimental stages. The object of developing these vertical and inclined walls in this design of locomotive was to find something feasible that would reduce the amount of flue blowing and flue repairs.

"The first and reasonable objection was the reduction of grate surface necessary for foundation of the brick wall. Tests are very encouraging along these lines. We are beginning to believe that the grate surface of the two front grates in a long, shallow firebox is of comparatively little use, and that the presence there of a hot refractory wall instead is of more benefit.

"The vertical and inclined walls are all constructed with air passages through the wall, so that a liberal quantity of free air is forced into firebox above the fire. Locomotives equipped with these walls are in the same class of service that they were in previous to the wall being applied, and they are steaming better, showing a decided improvement in combustion and smoke condition, and the blowing and repairing of flues being nearly eliminated.

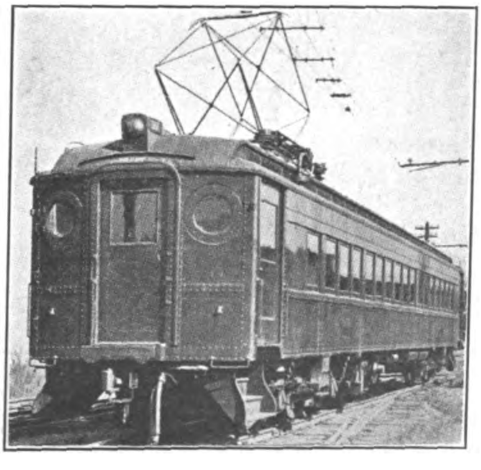
"Some fuel economy is being realized in every case, but enough fuel tests have not been made to strike a general average."

Electrical

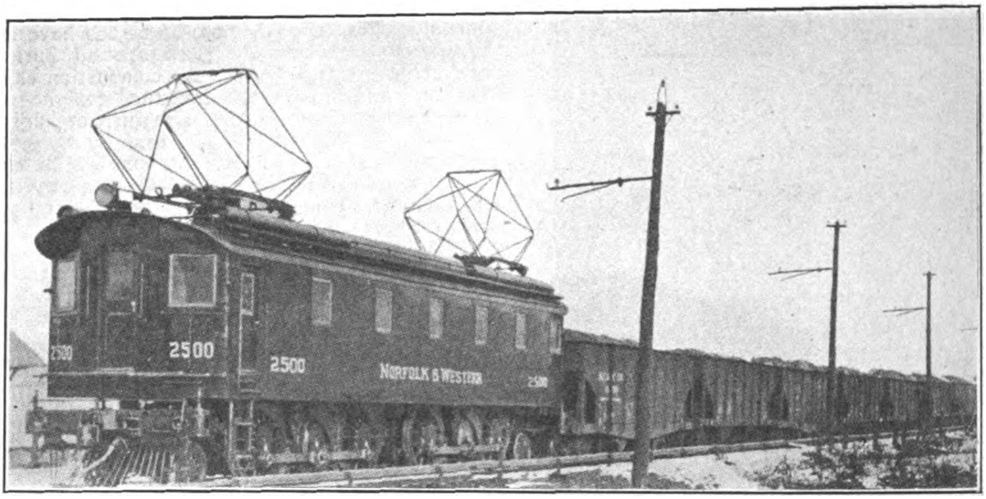
Progress in Electrification of Steam Roads.

THE Westinghouse Electric and Manufacturing Company has recently prepared an interesting pamphlet showing the progress which has occurred in the electrification of steam roads during the past year. With regard to the Pennsylvania Railroad it states that the electrification of twenty miles of the main line of this system extending from Philadelphia to Paoli may be considered to be the first installment of a general electrification plan, and that the ultimate completion of this plan will include the operation of the most important and extensive railroad traffic in the world.

After an exhaustive investigation, it has been decided to employ the single-phase system on the Pennsylvania as the most desirable for the Philadelphia suburban electrification; and the Westinghouse Electric and Manufacturing Company has been awarded the contract for the electrical equipment and for the motor cars required. The type of motor car is indicated in the accompanying illustration. These cars



GENERAL APPEARANCE OF THE NEW MULTIPLE-UNIT ELECTRIC CARS TO BE USED IN SUBURBAN SERVICE BY PENNSYLVANIA RAILROAD.



A Norfolk & Western 135-ton Half-unit Electric Locomotive and Train.

will operate from an 11,000-volt single-phase trolley and are each equipped with 225-H. P. motors and Westinghouse unit switch control. An operating speed of sixty miles per hour is contemplated with three to seven car trains with a maximum provision for ten car trains when required.

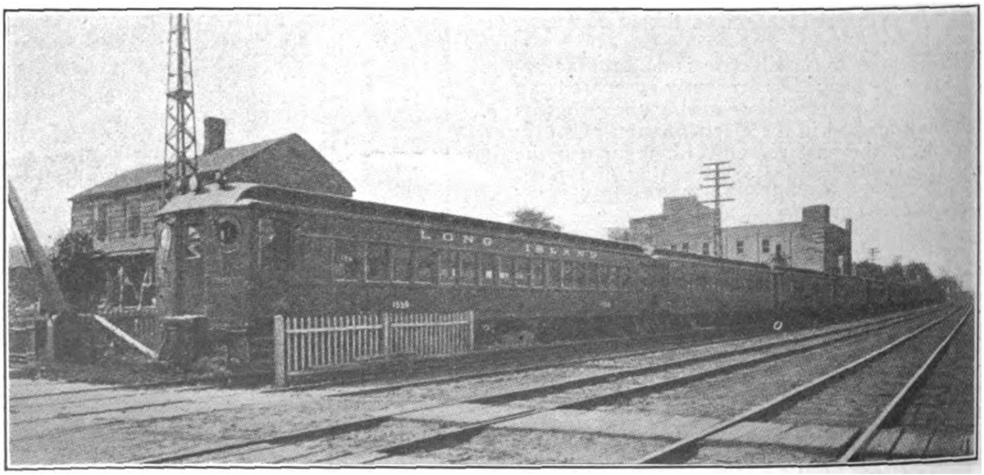
Speaking of the progress which has been made in the Norfolk and Western electrification, it is stated that the equipment, which so far consists of twelve 270-ton split-phase locomotives, is made up of two 135-ton half-units. The mechanical parts of each half, constructed by the Baldwin Locomotive Works, consist of a single box-type cab mounted on two articulated trucks, each truck carrying two three-phase motors. This type of motors makes these locomotives particularly adapted for service on heavy mountain grades.

Test results show these machines to be the most powerful electric locomotives in the world and the tractive efforts developed with a single pair of motors at a standstill, give a draw-bar pull of 42,500 pounds, indicating a draw-bar pull of 170,000 pounds per locomotive or 85,000 pounds per half unit.

The installation of these powerful locomotives on the Norfolk & Western Railway will permit an operating speed of fourteen instead of seven miles per hour with 3,250-ton coal trains. This doubles the capacity of the overcrowded 30-mile division between Vivian and Bluefield, West Virginia, and permits of the speedy handling of the large coal traffic, which originates on this section, most of which must be hauled up two per cent grades and through the Elkhorn Tunnel.

The power station will be located at Bluestone, W. Va. The electrical equipment in this station will consist of three Westinghouse 9,000-kva., three-phase, 25-cycle, 11,000-volt, 1,500-r.p.m. turbo-generators, a motor-generator exciter set and switchboards for controlling this apparatus. Single-phase step-up transformers are also to be supplied for the 44,000-volt transmission lines for feeding the transformer substations.

The pamphlet also deals with the completion



Multiple-Unit Electric Train Used by the Long Island Railroad for Suburban Service.

of the electrification of the New York, New Haven and Hartford Railroad to New Haven, which permits the operation of an entire steam locomotive division by electricity, being the first operation of this character ever realized.

The electrified zone of the New Haven System now includes approximately 550 miles of electrified track comprising the complete New York Division to New Haven, the Harlem River Division and the New York, Westchester and Boston Railroad. More than one hundred electric locomotives are required in addition to twenty-three motor cars and forty-four trailers used in suburban service.

The Long Island Railroad Company has also, during the past year, installed a number of additional double motor equipments which are now used for high speed trunk line suburban service with heavy modern steel cars. The principal traffic is handled by motor cars operating in multiple unit trains and the frequency and extent of the service, as well as its flexibility and reliability, have attracted the attention of operating officials in many sections of the country.

Other smaller roads have installed electrical equipment during the year, but the principal advance in the adoption of this class of propulsion, is in the four systems as indicated.

Terminal Improvements

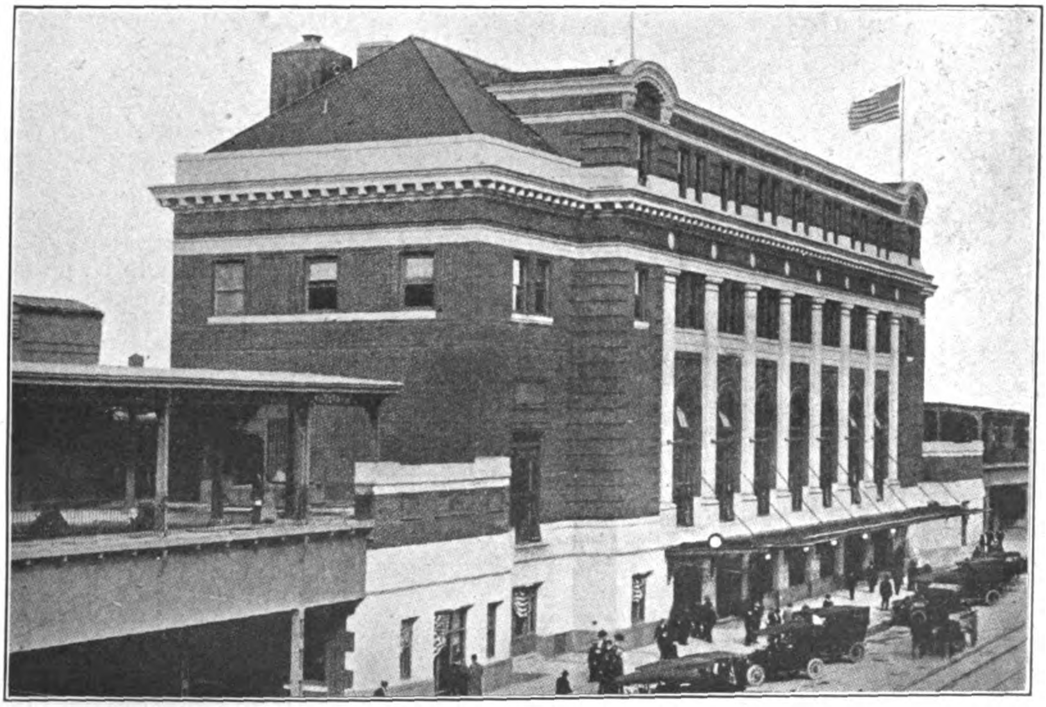
The New Union Station at Spokane, Wash.

THE new Union Station at Spokane, Wash., referred to in the "Railway World" of November, 1913, as in the course of construction is now completed. It is operated jointly by the Chicago, Milwaukee and St. Paul Railway and the Oregon-Washington Railroad and Navigation Company. The entrance as well as the ticket office and baggage room, are on the street level, while the general waiting room, with separate rooms for men and women, is on the second floor. The tracks which lie at the level of about 2½ stories, are reached by means of a mid-way from the general waiting room which runs out under the tracks and by means of stairways leads up between the tracks to the platforms at track level. Elevators are used to lift baggage from the ground floor to the track level. The third floor is reserved for offices and is occupied by the division superintendents and engineering departments of both roads.

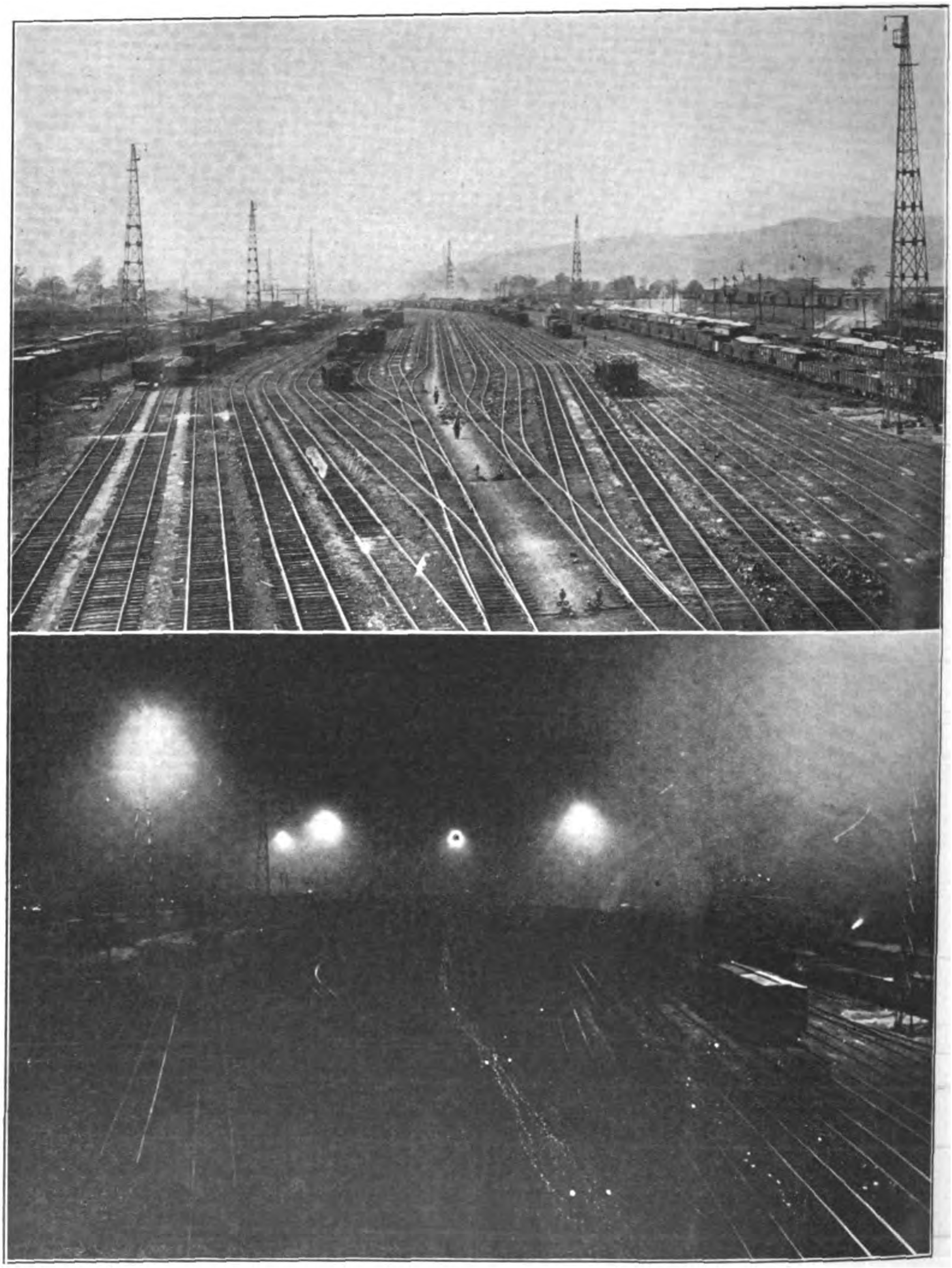
Red brick and yellow clay tile were used in wall construction, the roof being covered with red tile. White stucco is used for interior wall finish, while the floors are laid with mosaic. At night an indirect system of lighting is employed, the electric lights being hidden in the ceiling behind false beams, the flanges of which serve to reflect the light.

Classification Yard Lighting of the P. and L. E. R.R. at Pittsburgh.

IT is a very generally known fact that the average railroad derives its revenue principally from freight traffic, often carrying passengers at a loss. Therefore, anything



THE NEW SPOKANE, WASH., UNION STATION EMPLOYED JOINTLY BY THE C. M. & ST. P. RY., AND THE O. W. R. R. & N. CO.



Two Views of the Classification Yard of the Pittsburgh and Lake Erie Railroad at Pittsburgh, the Upper Showing the Steel Towers on Which Powerful Electric Lights Have Been Installed and the Lower Giving Some Indication of the Illumination Procured by This Source at Night.

that tends to facilitate the movement of cars or handling of freight is looked on with favor by the railroads.

Of the very greatest importance in freight handling but little known to the general public because of its infrequent contact therewith, is the classification yard. The function of this yard is the collection of freight cars into trains for specific destinations or routes. After the train has been made up with its proper quota of cars, it proceeds to the receiving yard where it waits until opportunity is afforded for it to pass out over the scales and be weighed, and proceed thence on its route.

The car or group of cars entering the yards travels by gravity under the care of a rider who directs it to its proper place in the yard and from whence he returns a foot to the head of the yard where additional cars are obtained and distributed.

As these yards are in operation 24 hours a day, it may easily be realized how important it is to have them properly lighted.

An interesting discussion of the lighting of railroad yards is given in a paper recently presented by Messrs. H. Kirschberg and A. C. Cotton on "Railroad Illuminating Engineering Track, Scale and Yard Lighting," before the Pittsburgh Section of the Illuminating Engineering Society.

The authors state that the freight haulage capacity of a road is as dependent on the scale and yard capacity as it is on motive power equipment, and that a congestion in the yards will reduce the earning power just as effectively as the disablement of a locomotive or other rolling stock.

The lighting of an area such as is presented by this class of yard affords some unique problems, the successful solution of which greatly facilitates the movement of freight traffic. The yard is not to be considered as an open area but, in reality, as a series of streets three or four feet wide, with buildings (freight cars) about fourteen feet high, on both sides.

One of the most effective installations of lighting in a classification yard recently made is that of the Pittsburgh and Lake Erie Railroad at McKees Rocks, just outside the city limits of Pittsburgh, Pa. This yard contains about twenty tracks extending for approximately one half mile.

The source of light is the Cooper Hewitt Quartz lamp, mounted on steel towers, as shown in the accompanying illustrations. The installation consists of eight units, the lamps being rated at 2400 candle power, with an energy consumption of 726 watts, resulting in an efficiency of .3 watts per candle. Direct current at 220 volts is supplied to the lamps from the power plant of the company located nearby.

The towers, which are twelve feet square at the base, are 100 feet high and are spaced about 400 feet, in two rows one on each side of the yard, or approximately 225 feet across. The lamp is suspended from a short mast arm which extends out over a platform for the attendant, access to which is had by means of a ladder mounted on the side of the tower.

A chain and a cut-out, however, permit the lamp to be lowered from the ground, thus obviating the necessity of the lamp attendant climbing the tower.

As the Quartz burners have a life of several thousand hours, and the globes are at such a height as to be out of the smoke zone, almost no cleaning or other attention is required.

The ideal condition of illumination of the yard, is of course to make it as light by night as by day, so that the riders, when directing the cars to their proper spaces in the yard, may be able to see clearly the location of other cars and thus prevent them from excessive "bumping."

The illumination of the McKees Rocks yards, which has been installed under the direction of Mr. D. P. Morrison, electrical engineer of the Pittsburgh and Lake Erie Railroad, very nearly approaches this ideal condition.

The light given by the lamps spaced as they are, completely floods the yards, enabling the men to see with proper clearness, not only every track and car but also the switches at the head of the yard. The illumination is such that one may readily read a newspaper at night. The entire absence of shadows and glare greatly facilitates the movement of the cars throughout the yard, by permitting the exact location of each to be easily determined, and also greatly adds to the safety of the men and tends to prevent accidents.

Possibly the best commendation given the efficiency of the installation is the statement made by one of the railroad officials that "the yard men never lose any chance to praise it." Considering the well known reluctance of the average individual to praise his working conditions, this statement is peculiarly significant.

In addition to the increased speed in handling cars gained through the better lighting, conditions are made much easier for the men returning a foot to the head of the yard, as when the yard is poorly lighted, it is difficult for them to avoid incoming cars, switches, posts and other obstacles, and the Pittsburgh and Lake Erie employes are particularly pleased with this feature.

The fact that the lamps are mounted at such a height permits an excellent distribution of the light which possesses an inherent color value that is particularly suitable for outdoor illumination.

Another feature that peculiarly adapts the Quartz lamp to this field of lighting is the steadiness of the light, other forms of illuminants having repeatedly proved unsatisfactory because of the unsteady light emitted, which was not conducive to good work.

The installation has not been in service long enough for any operating data to be secured, but in view of the high efficiency of the Quartz lamp and the minimum attendance required, it is confidently expected that the costs of operation will be equally as satisfactory as the other features of the installation.

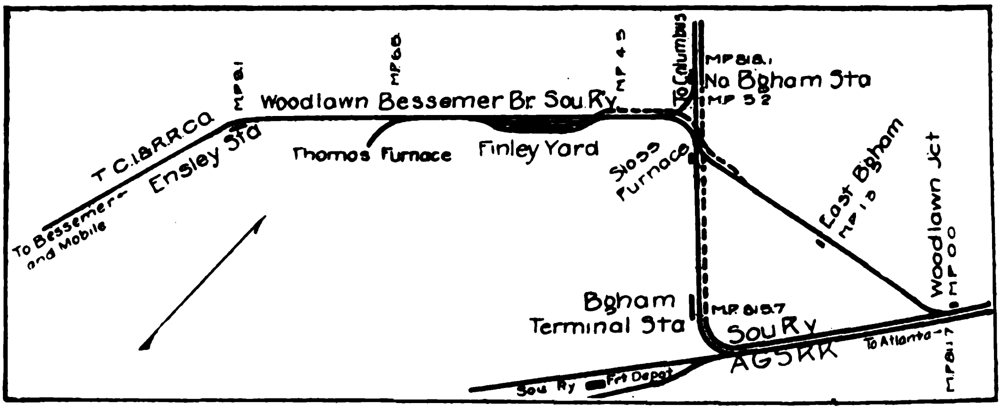
Terminal Improvements in New York.

MAYOR MITCHEL, of New York City, has named Ralph Peters, president of the Long Island Railroad, P. J. Flynn, vice-president of the Delaware, Lackawanna and Western and F. L. Stuart, chief engineer of the Baltimore and Ohio, to serve as an advisory committee in connection with the contemplated port improvements and development at New York. It is planned by the city authorities to work out a comprehensive plan of enlarging the shipping facilities both by water and rail traffic and in such connection, the co-operation of the railroad companies is sought.

New Double Track Service at Birmingham.

THE recent construction by the Southern Railway at Birmingham of a new second track gives this road a double track line leading from Ninth Avenue via North Birmingham to the new Finley yard now being completed and has brought about greatly improved operating conditions in the Birmingham District. In the accompanying map is shown the newly constructed second track represented by dotted lines.

The line between Ninth Avenue and North

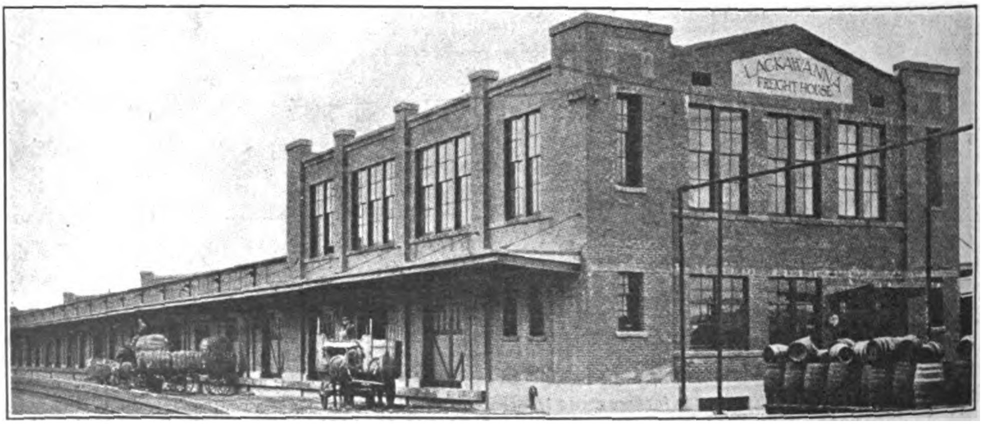

MP 8.1
MP 6.8
MP 4.5
To Columbus
MP 81.1
No Bgham Sta
MP 5.2
Woodlawn Bessemer Br. Sou. Ry.
T C I & R R Co
Ensley Sta
Thomas Furnace
Finley Yard
Sloss Furnace
East Bgham
MP 1.0
Woodlawn Jct
MP 0.0
To Bessemer and Mobile
Bgham Terminal Sta
MP 81.57
Sou Ry
A G S R R
To Atlanta
MP 81.7
Sou Ry
Frt Depot

Dotted Lines Show the New Second Track Recently Installed by the Southern Railway at Birmingham, Ala.

Birmingham is an unusually busy one and the provision of a double track has been of great advantage as it means much more than simply a 100 per cent increase in track facilities doing away, as it has, with the necessity of operating on a positive block system, and eliminating a large amount of switching congestion and consequent delays of traffic. When the new classification yard at Finley is placed in service this new double track will be of great importance as all switching movements between the Finley yard and the Birmingham freight station and industries in Birmingham proper, will be moved over it.

Lackawanna's New Freight Station at Utica, N. Y.—The Lackawanna has recently completed a new freight station at Utica, N. Y., which embodies a number of improvements in a building of this character. The frame work which embraces a space 402 feet long by 51 feet wide, is of reinforced concrete with filled in brick panels. The main floor, which contains a public lobby, cashier's office, locker and lunch rooms is 382x48 feet wide. The second story which is 82x48 feet contains the private offices of the freight agent and chief clerk, general office for the clerical force and a filing room. The heating and lighting plants are located in the basement under the office portion of the building. The freight room is floored with timber laid directly on a cinder fill, and is pitched ¼ inch to one foot towards the street side to assist in moving freight. Concrete floors are used for both the first and second stories in the office portion of the building.

The freight doors are counterbalanced and are 10 feet 8 inches wide. Improved lighting is obtained for the freight room by the employment of steel sash above the canopy on each side of the house. The freight room is divided by three fire walls of brick with tin covered doors. The lighting equipment includes both gas and electric light. A dumb waiter connects the freight floor with the office floor and is employed for the transfer of bills, receipts and other material between the clerks' office and the cashier. Adequate fire protection has been provided, and that portion of the freight room under the offices is heated in the winter by steam pipes under the platform on the car side where perishable freight is also stored when necessary. The freight house is paralleled by three tracks with a total capacity of 74 cars. The driveways between the team tracks and along the house are paved with granite blocks.


LACKAWANNA FREIGHT HOUSE

General Appearance of the Lackawanna's New Freight House at Utica, N. Y.

Interstate Commerce Commission

Change in Wage Statistics.

THE Commission has announced a change in its wage statistics which will become effective during the next fiscal year. The new form which the railroads will be required to use in making their annual reports is much more detailed and comprehensive than the one now in force. It classifies employes into sixty-eight occupational groups, as compared with only eighteen groups for which information has been given in the past. This change will meet the criticisms that the general classifications used in the past did not correctly set forth the compensation of certain classes of employes. It will also be of very great value to wage arbitration boards, which have not been able, with the statistical information now available, to determine satisfactorily the actual earnings or wages of employes in certain occupations.

By way of illustration, the working forces of railroad shops have hitherto been classified as "blacksmiths, machinists, carpenters, and other shopmen." Under this grouping it was obviously impossible to determine what was the compensation of a car inspector, painter, car repairer, or other classes of employes. Under the new schedule, however, this situation is rectified by breaking up the old general classifications into distinct occupational designations.

In the same way the new statistics will make a distinction between, and show separately, the earnings of enginemen and trainmen in freight, passenger and yard service. The new form, in general, will afford, comparatively speaking, satisfactory classifications according to specific occupations.

Probably the most important change, however, in the new form of wage statistics consists in the elimination entirely of the figures relative to the average daily compensation of officers and employes. These now shown by the Commission have been generally recognized as unreliable and of no value. These have been obtained by dividing the total annual compensation of any given class of employes by the total average number of days worked during the year by the employes in the given occupation.

Under the new form all this is done away with and an hourly rate of earnings substituted for the average daily wage. The railroads will in the future be required to report for sixty-eight groups of employes the "total number of hours on duty during the year," and the "total compensation during the year." By dividing the latter by the former it will be possible to secure the average hourly earnings of the employes in the principal occupations. For trainmen, paid on a mileage basis, the showing as to earnings will be on the basis of each mile run.

Another radical change is found in the method of reporting the number of railroad employes. The practice has been to show the average number on duty on June 30th of each year. Under the new arrangement the railroads will be required to report the average number of employes in service for each alternate month in the year, together with the average for the entire year. The advantage of this change consists in the light which it will throw upon unemployment and irregularity of employment.

Commission Upholds Advance in Passenger Rates.

ACTING upon the suggestion set forth in the opinion of the Commission, the Eastern trunk lines filed new tariffs to be effective on October 1, 1914, increasing the price of mileage books open and interchangeable, from the basis of two cents per mile to two and one quarter cents per mile.

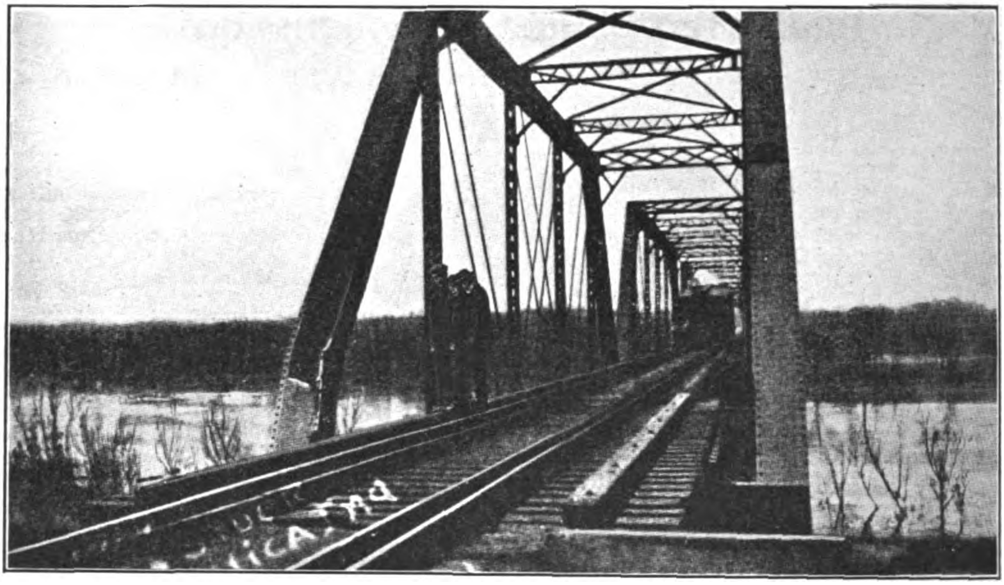
Protests against this proposed increase were lodged with the Commission both by individuals and by organizations, with the view of securing a suspension by the Commission of the proposed increase in mileage fares. The Commission declined to interfere and the increase went into effect on October 1. The reasonableness of the advances can be attacked by formal complaint, but the rates will continue operative until any complaint filed has been disposed of.

Report on the Wabash Derailment.

THE Commission through its chief of the Division of Safety, has issued a report on the derailment of eastbound passenger train No. 4, of the Wabash Railroad, at Attica, Ind., April 5, last, when three persons were killed. As reported at the time, this derailment was caused by running the train on to a bridge which had been weakened by a previous derailment. This first derailment occurred at a frog, but there is no study or explanation of the cause. The train, a freight train, was moving west. The car derailed in this train, the twelfth car, ran against the left or south batter post of the bridge and weakened it seriously. Subsequently, the freight engine had been backed over the bridge; and as this engine went over safely, and as the passenger engine was lighter than the freight, the passenger train was allowed to move over the bridge at about four miles an hour; but it broke through when on the span of which the weakened end post was a part.

James E. Howard, engineer of the Commission, examined the bridge, and he says that, while the passenger engine was lighter than the freight, it, with its adjacent car, caused a greater stress on the weakened post than did the freight engine and one car, because it was headed eastward. He calculates that when the passenger engine was on the weakened span the load on the end post was 186,800 lbs. and that when the freight engine was on the same span, this stress was 147,800 lbs.

It was reported at the time that the responsibility for allowing the passenger train to enter upon the weakened bridge was chargeable to the track supervisor, but Mr. Belnap says that, "while this man was apparently in charge, he did not personally notify the despatcher that it was safe for the passenger train to proceed over the bridge." After reviewing the testimony, Mr. Belnap says that, owing to the conflict in the evidence, responsibility for permitting the bridge to be used in its weakened condition cannot be definitely placed. The conductor of the freight, the station telegrapher and others testified at



View of Damaged End Post.

the inquiry, but the discrepancies in their testimony are not cleared up in the report.

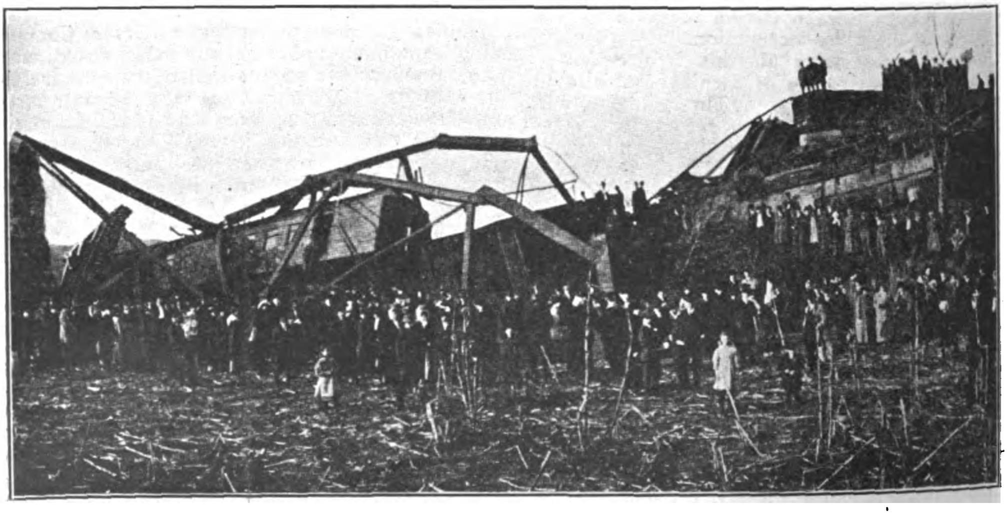
Engineer Howard says that the weakened condition of the bridge was clearly manifest and of a nature so serious that its dangerous condition should have been realized and traffic immediately suspended. This opinion appears to be based on the evidence of a photograph showing ruptures and distortion of the batter post.

The abstract of the testimony of the track supervisor indicates that he looked at the batter post and saw that it was "bent about six inches to the south," and yet he seems to have been so much influenced by the fact that the freight engine had passed over the bridge in safety that he took no measures to forbid the passage of the passenger train.

Changes in Express Classification to be Investigated.

THE Commission has ordered an investigation into the changes in the classification of express matter, proposed by the express companies affected by the orders of the Commission promulgated in connection with the decision of the express rate case of 1913. A formal hearing of the questions involved will be held in this city on October 30th.

For many months the express companies have been revising their classification of express matter, in conformity with suggestions of the Commission. As the changes include many changes in rates, it is necessary for the Commission to hold hearings before finally passing upon them.



General View of Wreck, First Span of Bridge.

Railway Investigations Postponed.

THE Commission has decided that, owing to the troubled financial conditions of the United States as a result of the European war, it will not immediately prosecute the proposed investigations into the Pere Marquette and other railroads, a financial investigation of which have been requested by Congress. These investigations will be postponed until some time in the future.

Investigation of Pipe Lines and Refining Interests Begun.

THE Commission has started an investigation into the production, transportation and marketing of crude petroleum.

The action was taken in compliance with a resolution of the Senate requesting the Commission to "make a thorough investigation of the conditions prevailing and that have prevailed in the States of New York, Pennsylvania, West Virginia, Oklahoma and Ohio or elsewhere," respecting oil production and trade; how, to what extent and by whom the oil market is controlled; financial inducements offered in the development of oil fields, the operation of pipe lines; and whether "the charge is true that substantially the same interests have operated the pipe lines, made the market, bought the crude oil, refined it and fixed the price of the refined products."

The Commission also is directed to ascertain whether any pipe line companies have recently stopped taking all or any part of the crude oil produced by independent operators. The Commission expects to direct particular attention to that phase of the inquiry with a view to ascertaining whether there has been a violation of law and collusion between pipe line and refining interests.

No dates have been fixed for hearings, and it is not expected that pending preliminary inquiries public hearings will be held before some time next year.

Further Hearings on Shreveport Rate Case.

FURTHER hearings in the Shreveport rate case have been granted on the petition of the Shreveport Chamber of Commerce and will be conducted by Commissioner Hall on October 27th at Shreveport. The original order as issued by the Commission a few months ago applies only to two roads and it is understood that the hearings which have now been granted will be held primarily for the purpose of supplementing the original order, making it applicable to all lines between these points and also to offer testimony in support of a plea for equalization of rates between other competitive cities and points within Shreveport territory.

Commission Enlarges Zone as Fixed by Intermountain Decision.

AN order has been issued by the Commission extending the boundaries of "zone 11," as fixed by the decision in the Intermountain rate cases, so as to include the greater part of the States of North Dakota and South Dakota, as well as a part of Minnesota not now in the zone.

Railroads operating in that zone are authorized by the order "to establish and maintain commodity rates from points of origin located in the territory to California terminals, and to maintain higher rates to intermediate points, provided the rates to the intermediate points do not exceed the rates on the same commodities from the same points of origin to California terminals by more than seven per cent."

Investigation convinced the Commission that "zone 11" was too rigidly restricted by the original decision, and that the carriers were unduly handicapped in making west-bound rates from that territory.

Switching Tariffs Suspended.

IN spite of the fact that the Commission, in its late advance rate decision virtually recommended that the railroads exact a charge for the switching performed for private corporations, various freight tariffs filed some months ago by the Eastern railroads which provided for a minimum charge of 5½ cents per ton and a charge of $2.00 per car for switching freight to and from points on private sidings and industrial plant tracks, have again been suspended from October 29th until April 29th. These tariffs were originally suspended from July 1st.

Christmas Gifts for European War Sufferers to be Transported Free.

THE Commission has issued a ruling to the effect that American railroads may transport free of charge, if they desire to do so, gifts made by the children of the United States for presentation on Christmas Day to the orphans of the European war. This ruling was announced in connection with the plans of an American newspaper to send a "Christmas Ship" abroad. The Commission made it clear, however, that the free transportation of such articles was entirely discretionary with the railroads.

Safety Device Inquiry.

THE Commission has issued a request for detailed information regarding all block signals and other train safety apparatus in use on American railroads. The request specifies that this information must be in Washington not later than January 15, 1915.

Rock Island Investigation.

DURING the past few months serious charges, many of them confusing, have been made against the Rock Island management. Even before it was first learned that another readjustment was pending, there appeared to be a constant misunderstanding of the relations that existed between the old railway company, the Iowa Holding Company and the New Jersey Holding Company. Charges and countercharges have been made of so grave a character that the Commission has begun an investigation covering the financial affairs of this Company and is making an effort, by calling witnesses at a public hearing, to either prove or discredit these charges and, in addition, to throw much-needed light on the whole Rock Island situation.

To Investigate the Little Kanawha Railroad.

IN compliance with the resolution of the United States Senate, the Commission has instituted an investigation into the operations of the Little Kanawha Railroad Company which operates a railway traversing the valley of the Little Kanawha in West Virginia.

The Senate desires to ascertain "whether or not the control of the stock is in the hands of any combination of railroads or of any trust or syndicate controlled by railroads engaged in interstate commerce, and whether or not the railroad is being held for any purpose other than as a legitimate branch of commerce, and whether it is being held to tie up and prevent the development of the Little Kanawha valley."

Demurrage Tariffs Suspended.

FREIGHT tariffs of Eastern roads proposing an increase in the demurrage charges on perishable freight in refrigerator cars have been suspended by the Commission until January 29th. The present charge is $1 per car per day in excess of the free time allowed. The suspended tariffs provided for an additional charge of $2 per car per day for the first two days after free time, and an additional charge of $3 per day for each succeeding day until the car is released.

Recent Decisions.

A NUMBER of decisions have recently been issued by the Commission of a significant and encouraging nature to the carriers.

The Commission has held to be lawful proposed increases in the proportional freight rates on grain and grain products from Kansas City, Mo., to Port Arthur, Tex., for export, applicable to traffic originating at various points in Kansas and Nebraska. The railroads are required, however, to cancel the tariffs under suspension and substitute others, omitting certain features objected to by the Commission.

A proposed increase in the freight rates on hides between points in New Mexico and Arizona to Los Angeles, Cal., from 80 cents to $1.20 per hundred pounds has been held by the Commission to be reasonable.

In its conclusions, the Commission held: "It is well established that neither the carriers nor the Commission may predicate rates on the necessities of the shippers and that efforts to equalize market competition may not justify or require rates that are unreasonably low nor permit unjust discrimination."

The Commission has held in the case of the New Orleans Live Stock Exchange and other cattle shippers against the Louisville & Nashville Railroad and others that a charge of $2.50 a car for cleaning and disinfecting cars, imposed upon the owners of cattle, was reasonable and not discriminatory. The service, it was pointed out, is required by Federal quarantine regulations generally.

The Commission has also declared reasonable, increased rates on rice between Helena, Ariz., and New Orleans, also an increase in the rates on the Southern Railway, the Baltimore and Ohio and other carriers on grain and grain products from the valley of Virginia to Carolina territory.

Refrigeration charges between New Orleans and Chicago have been permitted an advance of five cents a hundred pounds.

These increases, added to others which have recently been granted, constitute an encouraging indication that the Commission has at last adopted a more lenient policy towards the carriers.

STATE COMMISSIONS.

Ohio.—Urging free and unlimited co-operation between managers of industries and railroads, the Public Utilities Commission has addressed an open letter to the general public in order to avert a car shortage, which the Commission believes is possible during the season of crop movement.

"The supply of cars for this crop year is fixed," states the Public Utilities Commission, "and the task now before us is one of car economy, namely, how to keep the cars moving and performing a maximum service. Free and unlimited co-operation between the agents of our major industries—agriculture, mining, manufacturing and transportation—will be necessary, if the handling of the car supply is to attain to its fullest measure of efficiency. No one of these industries can shirk its responsibility without doing violence to the whole situation. For the agriculturists to insist upon monopolizing the use of freight cars and motive power of the transportation companies to move the last pound of their products to the exclusion of general merchandise would be destructive to economic distribution."

MECHANICAL.

New All-Steel Cabin Car for Pennsylvania Railroad.

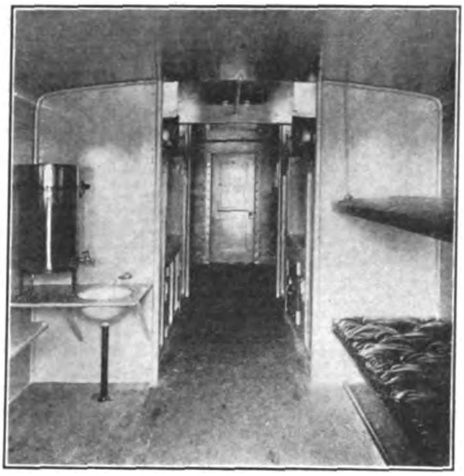
TO add one more unit to the steel equipment of the Pennsylvania Railroad, an all-steel cabin car has been designed, to be known as class "N-5."

Designers can well appreciate the difficulties encountered in working up a car of this type, as the severe conditions to which it is continually subjected makes it necessary that the construction be as strong as that of heavy steel freight cars. Local requirements vary considerably, and comfort and convenience also play an important part. The design of a cabin car must be intermediate between passenger and freight car design. Careful consideration has been given to each feature of the design, which will be shown by a study of the details.

This is believed to be the first all-steel cabin car ever designed. The inside lining, flooring through the passageway, platform floor, and window sash are the only parts for which wood is used.

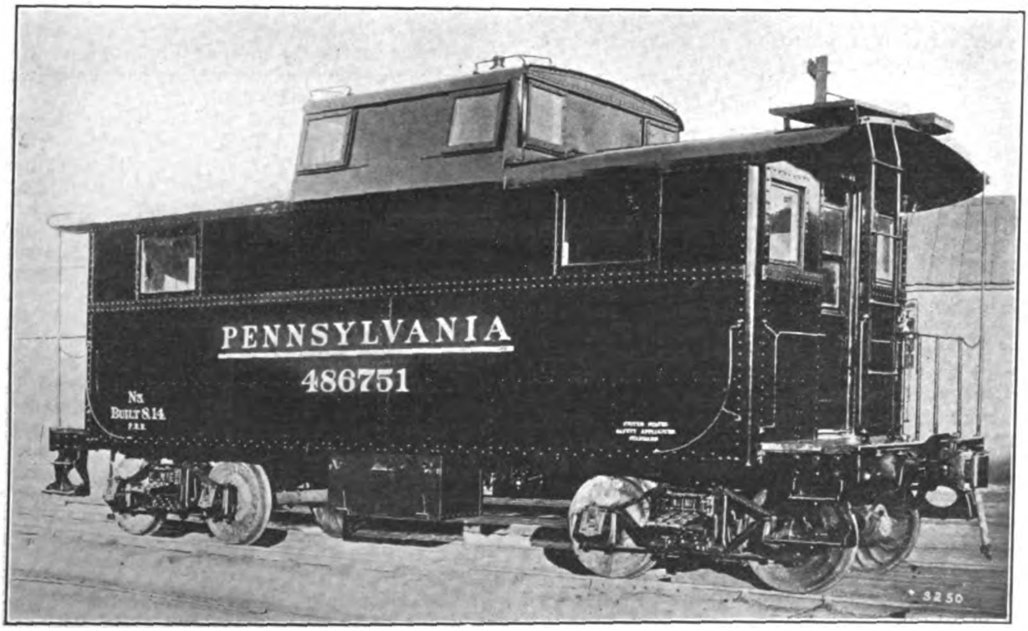
The car is 31 ft 0 in. from face to face of drawhead, 14 ft. 9½ in. high over cupola lamp, and 10 ft. 2½ in. wide over handholds. Each end of the car is equipped with 30 in. platforms, capped with a 1¾ in. floor, safety rails, side box step, and ratchet hand brakes in accordance with M. C. B. requirements.

The center sill or backbone construction of the underframe is the same as on freight cars and commensurate thereto in strength, being composed of two 10 in., 25-pound channels, a 21 in. x ½ in. coverplate riveted the full length of the center sills, and a 4 in. x 4 in. x ¾ in. angle riveted to the bottom of each channel, on the inside and extending continuously between back draft lugs, the total area being 36 square inches. The center construction is further reinforced at each end by a striking plate, a center plate reinforcing casting above the center plate, and pressed steel spreaders between the diaphragms. The front and back draft lugs are cast integral with the striking plate and center plate reinforcing castings. Two dished diaphragms ⅜ in. thick are located 3 ft. 7 13-16 in. on either side of the center line of cupola, which is 12½ in. off center line of car, and are securely riveted to the center and side sills. The usual body bolster has been eliminated and the body side bearings are supported by steel cantilever castings, which are securely riveted to the center sills and to a ½ in. tie plate, which extends across the bottom of the center sills out to the end of the side bearing castings. The floor support at the side, or side sill, is a 4 in. x 4 in. x ⅜ in. angle, the back of which points away from the center line of car. This angle is continuous between the side and end sill connecting castings, which form the side supports of the platforms and connect the side sills, the diagonal brace, and the end sills are shaped to form corner push-pole pockets. The diagonal brace, which transmits the horizontal strains from the side sill to the center sills, is a U-shaped section 6 in. wide and ⅜ in. thick, with 3 in. flanges pointing downward. They are flattened out at either end and securely riveted to the top flange of the center sills and the side and end sill connection. The end sill is also a pressed U-shaped section, which is fastened to the striking plate and the side and end sill connecting casting. The entire underframe, with the exception of the platform, is covered with a ¼ in. steel plate, which extends from the center sill cover plate to the side sill angle, giving to the underframe transverse and diagonal stiffness and increasing the longitudinal resistance. The brake rigging supports and the equipment box, which is 4 ft. x 0 in. long, 23 in. deep, and 21⅞ in. high, and secured to this floor sheet. The equipment box is made of ⅛ in. sheets, with a door at the front, which swings down, and is equipped with a handle for lowering and a hasp for securing when in position.



INTERIOR VIEW OF PENNSYLVANIA'S ALL STEEL CABIN CAR.

The superstructure of this car is rather unique, in that there are no posts, the transverse stiffness being obtained through the end construction and bulkheads, which form the sides of the locker at the center of the car. These bulkheads are so located that they are directly above the diaphragms of the underframe, and are securely



PENNSYLVANIA RAILROAD'S ALL STEEL CABIN CAR.

riveted thereto, thus forming four stiffeners at the center of the car 3 ft. 0 in. deep. The sides and ends of the car are made up of ⅛ in. sheets and a 4 in. x ½ in. belt rail. The bottom panel is composed of two sheets, joined together on the center line of cupola by a butt strip, and butting against the top side sheets beneath the belt rail, which is 4 ft. 2 in. from bottom of the side sill angle. The top panel is composed of three sheets, which are joined together by the window frames. At the corner the side and end sheets are connected by a 3-16 in. coverplate, which acts as a corner post. The end construction is of the same general design, the sheets being fastened to the underframe by a 2 in. x 2 in. x ¼ in. angle, as well as riveted beneath the corner coverplate, the belt rail and the end door frame. The end is further supported by two 4 in. channels, which act as door posts. These channels are fastened at the bottom to a cast steel threshold plate and the underframe, while at the top they are secured to the roof sheets.

On the inside of the belt rail, and at the eaves, extending from end sheet to bulkhead, is a U-shaped section, which stiffens the sides of the car at these points, and also provides a means of securing nailing strip to support the lining.

The side window frames, which are riveted to the outside of the side sheets, are 3-16 in. thick. A ½ in. x 3-16 in. filler extends along the top of the side sheets, between window frames, so that it is possible to extend them up under the roof sheets, making the construction waterproof, and at the same time forming a straight surface to which the roof sheets can be attached.

The construction of the cupola, which is of the same general type, extends 2 ft. x 6 in. above the main body of the car. The cupola side and end windows are all hung on the outside, a top guide rail being incorporated with the eaves, while the window sill forms the bottom guide. This construction is such that when the window is pushed up against the end projection strip it forms a weather tight construction. The object in placing the windows outside is to leave the interior smooth. The sides of the cupola are inclined towards the center line of car to give tunnel clearance.

The roof sheets, which are 3-32 in. thick, extend lengthwise of the car in three panels, two of which—forming side panels—extend down over the sides of the car and fasten to the side sheets and eaves, and a central panel, which overlaps the two side panels and is secured with ¼ in. rivets spaced 1½ in. apart. Tar paper is placed between the lap of the center and side sheets, to insure a water-tight joint. The main roof is supported by U-shaped purlines, which extend from end sheets of car to the cupola end sheets. The cupola roof is of the same construction. These purlines answer the double purpose of supporting the roof and providing a means of securing nailing strip for the ceiling.

The main roof extends over the platform 2 ft. 2½ in., and has a 2 in. x 2 in. x ¼ in. angle extending around the edge, which lends stiffness to the structure, and also acts as a weather strip for leading the water away from the cases over the platform.

The roof is equipped with running board, latitudinal extension, and grab irons according to M. C. B. standards.

Convenience, comfort and safety are the features given greatest consideration on the inside. The car is equipped with a stove for heating and cooking purposes, a drop table, water cooler, washstand, refrigerator, desk and hopper, as well as lockers, drawers and cupboards for the men's personal belongings. Three pairs of bunks, upper and lower, are located along the sides of the car; one at stove end and two at the opposite end. The lower bunks are of a box type, 6 ft. 10 in. long and 2 ft. 5 in. wide, in the bottom of which may be stored equipment necessary to the car. The upper bunks, which are the same dimensions, are attached to the belt rail by means of a cast steel hinge bracket, and when not required may be lowered and used as a back for the lower bunk when used as a seat. The upper bunks, when raised, are held in position by chains secured to the roof purlines, and hooked to the side of the bunk frame, which is composed of 1¾ in. x 1¾ in. x ¼ in. angles, to which wooden nailing strips are secured for tacking down the canvas top. Including cupola seats, the car has sleeping facilities for eight men, the cupola seats being the same width and length as the bunks.

The lockers, which are located between the bulkheads and lower cupola seats, contain the refrigerator in the lower center section, on the side opposite the stove, and the hopper in one of the end lockers on the other side. The arrangement is such that there is ample room for dishes, food, lamps, oil and waste. All locker doors, drawers, shelves, etc., are 1-16 in. thick.

The side and end windows are above the belt rail, so that the light is not cut off when the upper bunk is raised. The side windows are fixed, while those at the end, including the end door windows, may be dropped. All locks or catches, with the exception of the refrigerator door lock, are flush, thus eliminating projections against which a man might be thrown by a sudden lurch of the car. The cupola is also equipped with a safety rail, extending between end sheets of cupola on center line of car, which is also of convenience as a handhold when descending from the cupola seat.

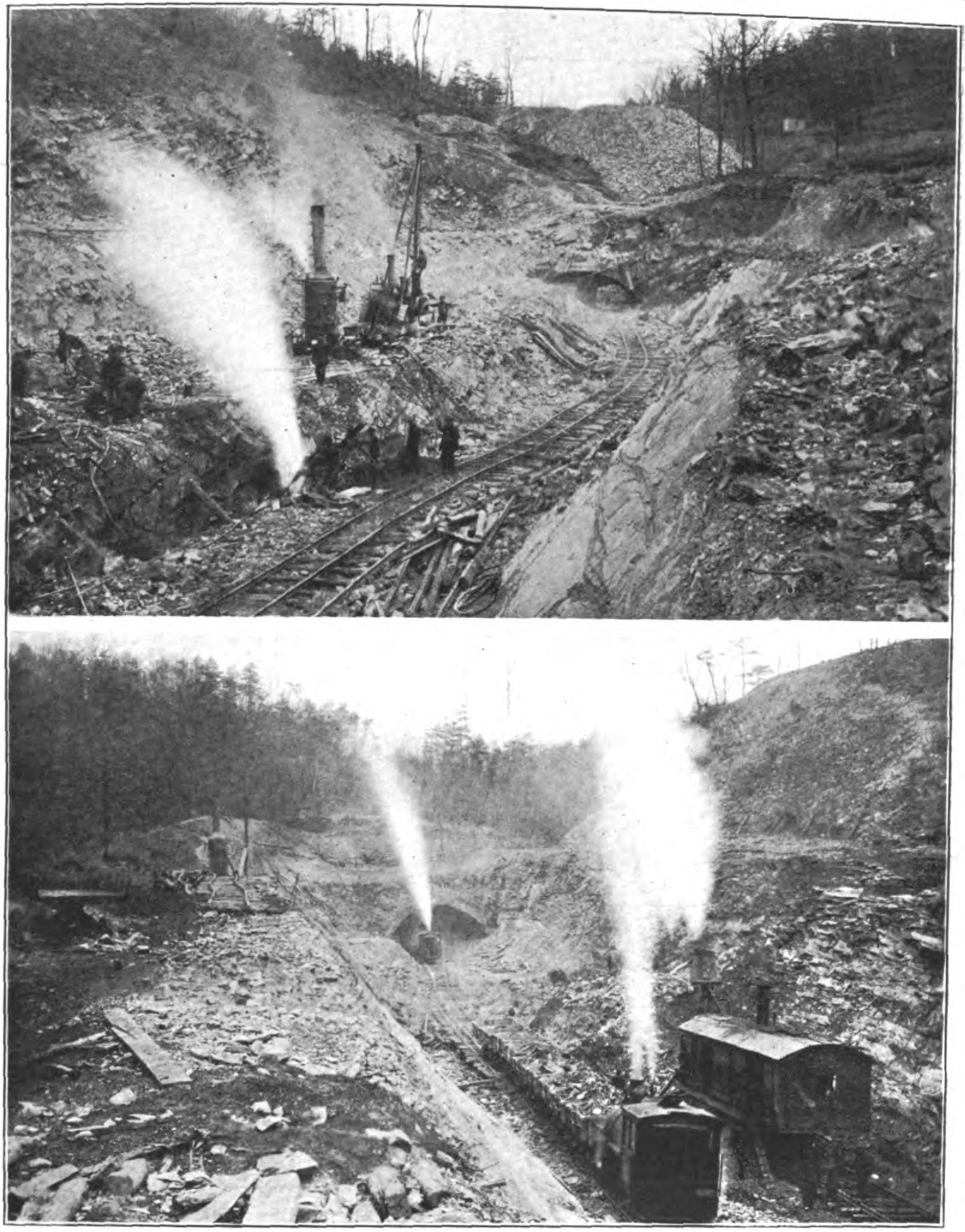
The car is equipped with specially designed arch bar trucks of 5 ft. 0 in. wheelbase, having axles with 3¾ in. x 7 in. journals. The usual column castings are replaced by a malleable casting which serves as a column casting, brake hanger support, spring seat, and spring plank extension. The bolster is of the inverted U-shaped type, with malleable iron stiffening castings, spring seats and bolster guides.

The springs are full elliptical, 34 in. long, three in each group.

The truck is tied together at the center by a U-shaped spring plank ⅜ in. thick and 8 in. wide, with 1½ in. vertical legs turned upward. The spring plank extends across the truck 4⅝ in. beyond the center line of arch bars, and is flattened out at either end and bolted to the bolster guide spring seat and brake hanger support.

EQUIPMENT.

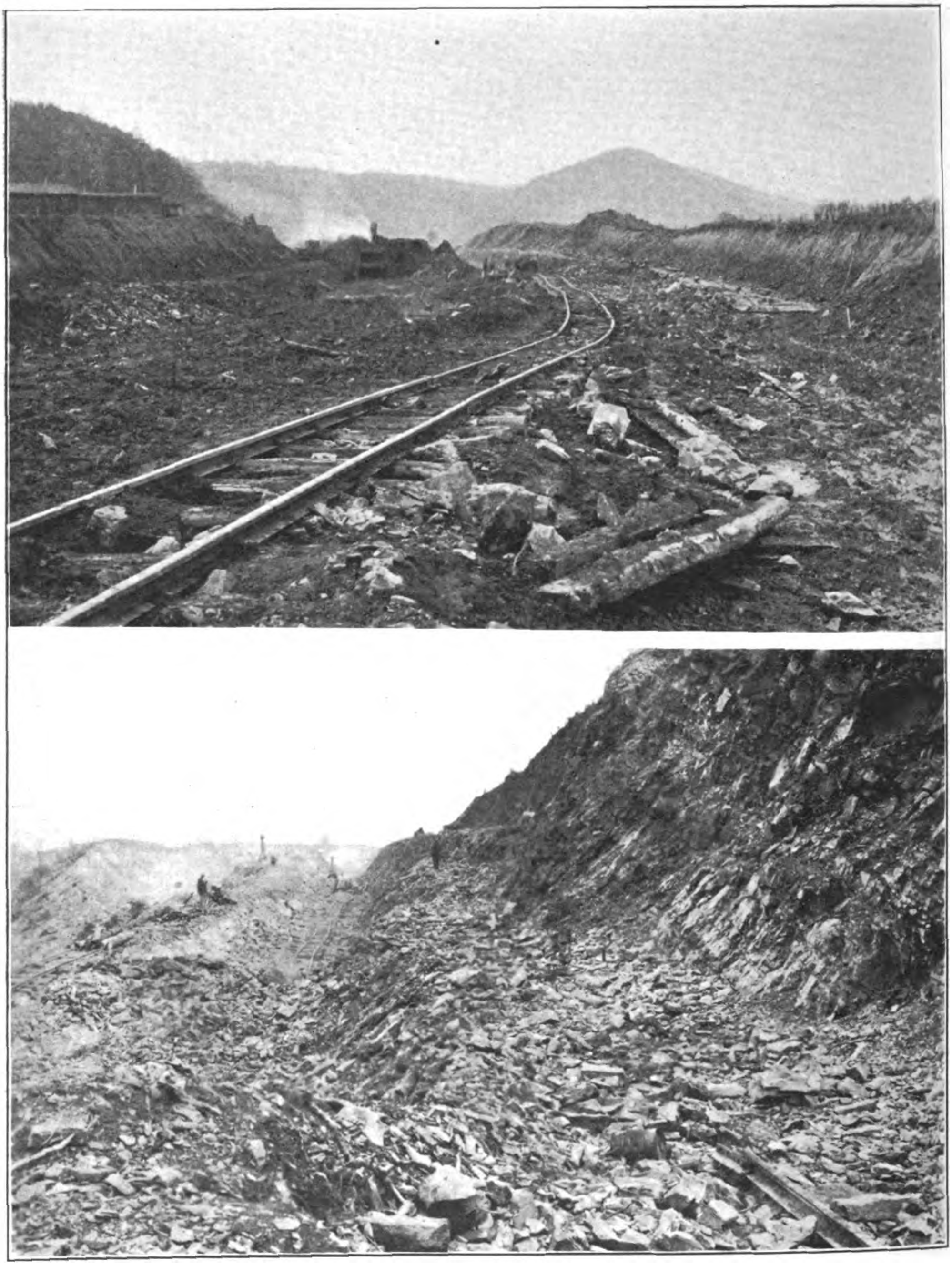
The Economic Significance of the Magnolia Cut-Off of the Baltimore and Ohio Railroad.—Discussing from an economic standpoint the



Two Views of Construction Work on Magnolia Cut-Off of the Baltimore and Ohio Railroad. Upper Photograph Shows East Approach to Stuart Tunnel: Lower, West Approach to Same Tunnel.

Magnolia cut-off of the Baltimore and Ohio Railroad between Orleans Road and Little Cacapon, W. Va., Harry C. Plummer, in "Scientific American" points to the ultimate saving which this improvement will effect in the future cost of operation. The writer ranks the project as "among the great engineering feats of American railroading." The article is comprehensively illustrated with views showing the progress of the work.

"It accomplishes for the B. & O. two distinct economic advantages," continues Mr. Plummer. "It effects a saving of 5.8 miles in the length and 887 degrees of curvature of the eastbound tracks and does away with a sharp grade at Hansrote, which has required the use of pusher engines for eastbound traffic climbing the mountains at that point. Secondly, it completely equips the B. & O. as a three-track and four-track system east of Cumberland, Md., to Martinsburg, W.

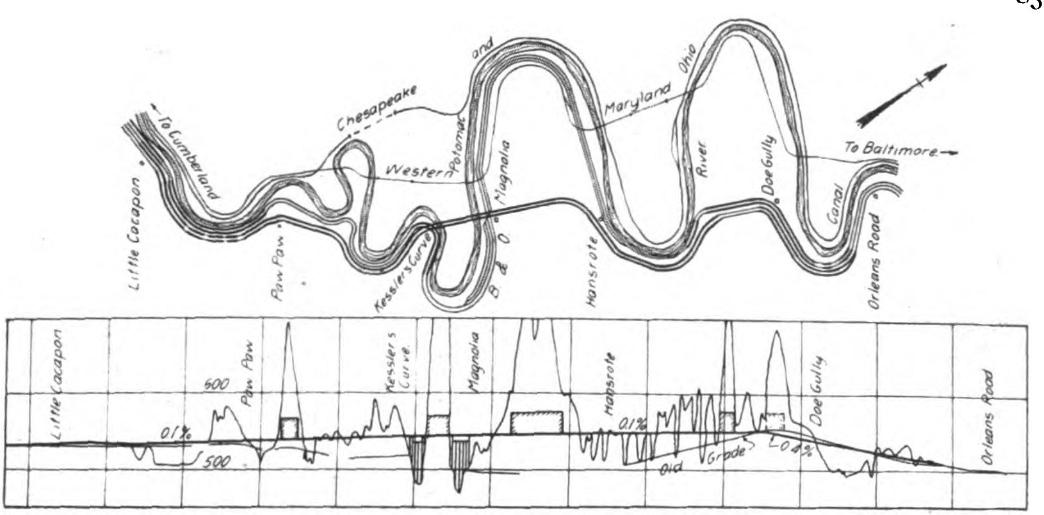


West and East Views of the Cut of James F. McCabe. An Expensive Engineer Feat Which Will Be More Than Justified in Reduction in Future Costs of Operations.

Va., and, in conjunction with extensive track additions on the mountain divisions, effected during the last three years, provides ample facilities to care for the almost indefinite future.

"Factors of economic operation were directly responsible for the Magnolia cut-off improvement being undertaken by the Baltimore & Ohio Railroad. Embraced in a general economic study of its operation is the plan eventually to overcome the high operating costs in mountainous country by revising its line, reducing grades, eliminating curvature, and doing away with helper engine service on that section of the line eastward from Cumberland, Md.

"The plan contemplates a four-track system of 105 miles, from Cumberland to Brunswick, the point of intersection of the Cumberland and Baltimore divisions. In fact, the ultimate plan is to continue the four-track line to the sea-



Map and profile of the Magnolia cut-off.

board at Baltimore, with the construction of third and fourth tracks from Brunswick to Washington Junction, Md., where two two-track lines converge toward Baltimore, one by way of Washington, the other through Frederick County. So, when it was determined to build the Magnolia improvement, the railroad began to open the neck of the bottle.

"The east end of the Cumberland Division of the Baltimore & Ohio Railroad is known far and wide in railroad circles as the most congested stretch of railroad line in the United States. Two main lines, one from Chicago, the other from St. Louis, converge at Cumberland, with the bulk of their tonnage gathered from innumerable sub-main and branch lines. Most of this business is for seaboard movement to Washington, Baltimore, Philadelphia, New York or New England. The question of keeping the trains moving with sufficient regularity to avoid blockades has long been one of moment and a problem calling for the most efficient operating methods.

"The daily average train movement over the line is eighty-five trains of all classes, consisting of fast and local passenger trains, through, local and pick-up trains, and numerous work trains and contractors' equipment, and of this there is an average of seventy freight trains daily. Another factor in the operation of the line under conditions prevailing before the improvements were undertaken was the diversity of traffic, both with respect to volume and class of business, and many incidents occur which tend to bring on an abnormal movement of one grade or other of traffic.

"While it has not been fully decided how the new line shall be used, it is generally believed that the two new tracks will be devoted to eastbound trains, and the old line turned over exclusively to westbound trains, this being the original idea when the line was surveyed.

"So quietly has work progressed upon the cut-off that traffic upon the old tracks has not been at all interrupted and, by day and by night, the passengers on local and limited trains have been swept past the scene of the big improvement for the most part unmindful of the task the engineers have forged to a successful conclusion.

"The greater part of the excavating has been done through solid rock. The slopes of the embankment, at river approaches, have been protected by concrete retaining walls, and the slopes along the hillsides terraced to obviate all danger from slides or falling rock.

"The improvement has cost approximately $6,000,000 and the operations have extended over a period of fourteen months."

ORGANIZATION NOTES.

Annual Meeting of the American Electric Railway Association.—The annual convention of the American Electric Railway Association was held at Atlantic City, from the 12th to the 16th of October. This organization is rapidly growing in importance as the electric railway industry is reaching that stage of development entitling it to the rank of a public utility of the first order. The industry has reached the stage where it is now engaged in perfecting its organization and putting into general practice those methods of operation that sufficient experience has approved as most desirable. For this reason the annual meetings of the national association are becoming more important. The membership at the present time includes over four hundred companies and represents 36,500 out of a total of 43,100 miles of track.

October Meeting of New York Railroad Club.—The October meeting of the New York Railroad Club was held on the 16th inst., and was addressed by Mr. O. O. Dixon, assistant engineer of the Interborough Rapid Transit Company, who presented a paper on "Distinctive Features of Track Equipment of the New York Subway."

Third Annual Safety Congress.—The National Council for Industrial Safety will hold its Third

Annual Safety Congress at the Hotel La Salle, Chicago, on October 13th to 15th, inclusive. A number of interesting addresses will be delivered on various phases of the safety movement, some of which will be illustrated by the employment of moving pictures. The Pacific Electric Railway Company of Los Angeles, Cal., will present a series of moving pictures for the purpose of demonstrating the safe and unsafe practices on interurban electric railways. Another illustrated lecture which should prove of interest to railway officials, will be that presented by Doctor F. D. Patterson, of J. G. Brill Company, Philadelphia, on "The Safe and Unsafe Practices in Shops."

The afternoon of October 15th, will be largely devoted to transportation, and will include an address by Chairman Insull, of this section, on "Safety as a Means of Bettering the Relations Between the Public and Public Service Corporations," and another by W. B. Spaulding, chairman of the Central Safety Committee of the St. Louis and San Francisco Railroad on "The Safety Problem of the Railroads."

The National Council for Industrial Safety has been organized with the avowed purpose of producing a maximum reduction in the enormous annual toll exacted through all classes of accidents in the United States.

In the industries of this country alone there is an average of more than 2,000,000 serious accidents every year. From experience, safety engineers are aware that at least fifty per cent of these can be avoided; and the National Council has pledged itself to use every known agency to co-operate in reducing these to the least possible figure. More than 35,000 of such accidents prove fatal every twelve-month; and on this basis safety experts figure that more than 17,000 valuable lives can be saved each year.

The National Council is a non-profit organization whose affairs are conducted by an Executive Committee and officers constituting a strong body of safety experts; and among its rapidly increasing membership are included corporations and companies whose names are household words from the Atlantic to the Pacific coasts.

It has established Local Councils in various sections of the country; and through these, and from its headquarters in the Continental and Commercial Bank Building, it is conducting a comprehensive campaign of Accident Prevention in all phases of Industrial, Public and Private life.

It maintains a general and specific Accident Prevention Service for its members in the wide dissemination of all the tested plans, methods and ideas which cut down casualties of whatever nature. On safety subjects it facilitates the use of motion picture films, stereopticon slides and lectures. It is conducting important and far-reaching investigations through its several committees. It is now arranging for the efficient testing and examination of all classes of safety devices and guards. It will shortly issue a handbook on safety for children entitled "Sure Pop and the Safety Scouts," which prominent educators have characterized as a monumental work, and one which will find a place in almost every school of the country.

Annual Meeting of the Railway Financial Officers.—At the annual meeting of the Society of Railway Financial Officers, held at the Hotel Aspinwall, Lenox, Mass., September 15th, 16th and 17th, the following officers were elected:

Executive Committee.—(With terms expiring 1916)—F. H. Hamilton, Secretary and Treasurer, St. Louis & S. F. R. R.; C. W. Rhoades, Assistant Treasurer, Baltimore & Ohio R. R.; H. E. Suckling, Treasurer, Canadian Pacific Ry.; A. O. Wellman, Assistant Treasurer, The A. T. & S. F. Railway.

Officers for the Next Year.—President, A. O. Wellman, (Asst. Treas., The A. T. & S. F. Ry.); First Vice-President, J. G. Stidger, (Treas., Wheeling & L. E. Ry.); Second Vice-President, C. W. Rhoades, (Asst. Treas., Balt. & Ohio Ry.); Secretary and Treasurer, Carl Nyquist, (Asst. Secy., The C. R. I. & P. Ry.).

The Society had a well attended and instructive meeting taking up among other things the matter of uniform form of vouchers and agents' drafts, general railway clearing-house, loose-leaf systems for treasury department records, methods of paying large shop forces, freight collection bureaus in large cities and items of general interest.

Mr. Louis B. Franklin, vice-president of the Guaranty Trust Company of New York, addressed the Society on the subject of "The Effect of the War on American Railroad Bonds."

The time and place for the next annual meeting of the Society will not be decided until after the first of the coming year.

The Traveling Engineers' Convention.

THE Traveling Engineers held a convention in Chicago, last month, which was notable for the thorough manner in which the various topics were handled by those present, and a larger number actively participated in the discussions than at any previous convention. The discussion on smoke prevention brought out the fact that great progress has been made in this particular, and that instead of being an impossibility, smokeless firing is now merely a matter of skill and care, particularly the latter.

One of the most important reports of the meeting was on "Operation of All Locomotives with a View of Obtaining Maximum Efficiency at Lowest Cost," presented by a committee of which Mr. I. K. Scott was chairman, assisted by Messrs. P. J. Miller, J. J. McNeill, W. L. Robinson, C. W. Hyde, F. W. Edwards, M. H. Haig and G. W. Tawse. It would be difficult to name an important subject connected with locomotive operation that this report failed to cover and to throw new light thereon. Realizing the magnitude of their subject, the committee circumscribed the investigation to certain prime factors as follows:

"1. Assignment and distribution of power.

"2. Classified or general repairs, when and how made.

"3. Location, application and operation of lubricators, injectors and other boiler attachments.

"4. Terminal inspection and maintenance of locomotives.

"5. Superheaters, brick arches, their care, operation and maintenance.

"6. Selecting, employing, promoting, examining and instructing engineers and firemen with a view of securing and maintaining good service.

"7. Terminal and road facilities for turning and prompt handling of power.

"8. Handling and firing locomotives with a view of obtaining maximum efficiency.

"9. Heat, steam, power and time that is wasted and how to avoid it."

It is hardly necessary to state that in the thorough discussion which occurred with regard to these various factors, little of importance was left out in connection with locomotive management.

Bi-Monthly Meeting of Pittsburgh Traffic Club.—The Traffic Club of Pittsburgh held their bi-monthly dinner and business meeting in the English Room of the Fort Pitt Hotel, Monday, October 12th, more than 150 being in attendance. Pictures showing progress in the construction of the Panama Canal were used to illustrate a talk by H. B. Furlong, of the McClintic Marshall Construction Company. The pictures were highly instructive as they featured the prominence of the material furnished by the State of Pennsylvania which was 85 per cent of the total, 75 per cent of which came from the Pittsburgh District. President E. F. Lalk presided and delivered an address. Mr. Furlong presented President Lalk with a lignum vitae gavel to remain in possession of the organization. The gavel was made from wood of a tie laid in 1852 as part of the original construction of the Panama Railroad. An excellent musical program was provided. Chairman R. B. Merrick and his committee handled the affair in excellent manner.

Annual Meeting of the Railway Signal Association.—The following synopsis of the 19th annual meeting of the Railway Signal Association which was held at Bluff Point, New York, on September 21-24, inclusive, was specially prepared for the "Railway World" by Mr. F. P. Patenal, signal engineer of the Baltimore and Ohio Railroad, and also president of the Association.

This meeting was the best attended in the history of the Association, and as the success of the meetings depends on the attendance, it was considered that this was one of the most successful meetings ever held.

The Board of Direction held its meeting on Monday, September 21st, for the purpose of winding up the business of the Board for the fiscal year 1914.

Session on Tuesday opened at 10 A. M., presided over by F. P. Patenall, signal engineer, B. & O. System, president of the Association.

Manager Thieriot of the D. & H. hotels and dining cars in an address of welcome handed over the keys of the Hotel Champlain to the members of the Railway Signal Association.

This was followed by the president's address.

Reports were presented by the Secretary and the Board of Direction covering the standing of the Association and business transacted during the year.

The following committee reports were then considered and discussed:

Committee No. 1—Signaling practice.
Special Committee—Method of Recording Signal Performance.
Committee No. 10—Storage Battery and Charging Equipment.
Special Committee—Lightning Protection.
Committee No. 9—Wires and Cables.
Committee No. 3—Power Interlocking.
Committee No. 4—Automatic Block.

In connection with the report of Committee No. 4, a minority report was made by G. H. Dryden, which proved to be of considerable interest, in that the chairman outlined practices which shows great progress in the Automatic Signaling for Single Track Railroads.

On Wednesday, September 23rd, the following reports were considered:

Committee No. 6—Standard Designs & Circuit Nomenclature.
Committee No. 8—Electric Railways & A. C. Signaling.
Special Committee—Amendments to the Constitution.

The annual dinner of the Association was held on the evening of Wednesday, September 23rd, and was one of interest, the attendance being 422. President F. P. Patenall acting as toastmaster, addresses were made by the following gentlemen:

Mr. C. S. Sims, vice-president, Delaware & Hudson Railroad.
Mr. A. H. Rudd, signal engineer, Pennsylvania Railroad.
Mr. T. S. Stevens, signal engineer, Atchison, Topeka & Santa Fe.

A most enjoyable evening was spent, the dinner course being interspersed with laughable situations introduced in the reading of messages received by the toastmaster bearing on current topics.

On Thursday, September 24th, the following reports were submitted and discussed:

Special Committee—Contracts.
Committee No. 2—Mechanical Interlocking.
Committee No. 5—Manual Block.
Special Committee—Signaling Requirements of Electric Railways.
Miscellaneous Business—

At the conclusion of the regular business on this day (September 24th) announcements were made as to the result of the letter ballot and the election of officers for the year 1915, which were as follows:

For President, Mr. Thomas S. Stevens, signal engineer, Santa Fe System; for Junior Vice-President, Mr. C. A. Dunham, signal engineer, Great Northern Railway; for Secretary-Treasurer, Mr. C. C. Rosenberg, Bethlehem, Pa.

The Junior Vice-President for the year 1914 automatically becomes Senior Vice-President for the year 1915, and Mr. W. J. Eck, signal engineer, Southern Railway, succeeds to the position vacated by Mr. T. S. Stevens to the presidency.

The ladies attending the Convention found ample entertainment in the way of tennis, golf, croquet, swimming, boat trips on the lake and a trip to Ausable Chasm.

The 1915 annual meeting is to be held at Salt Lake City.

Annual Convention of Passenger and Ticket Agents.—The American Association of General Passenger and Ticket Agents held its annual convention in Boston on September 15th to 16th. It was decided to change the name of the Association to the American Association of Passenger Traffic Officials. The meeting as a whole was characterized by a general effort for greater economy.

A report was submitted by the Committee on Economies on the distribution of folders and the Committee was continued with instructions to carry on its investigation. The recommendations of the Committee included a continuance of the present method of distributing folders in a modified form and it was also recommended that the placing of folded boxes in hotels and cities of less than 50,000 inhabitants, be discontinued. Closer co-operation with the Official Guide in this particular was recommended and the discontinuance of the distribution of folders on trans-Atlantic steamships was also urged for the reason that the Official Guide would answer the requirements of the ocean traveler.

The question of maintaining city ticket offices in foreign territory where the lines do not have initial rails was thoroughly discussed and a committee appointed to further investigate the subject. There appears to be an opportunity for a great saving in this direction.

The Committee on Limitations of Local Tickets reported that the new multi-route tickets of horizontal and vertical forms have now received the endorsement of the Association and a number of roads are experimenting with these forms in order to determine which of the two will be most convenient and effective. By their employment it is hoped to reduce coupon ticket form representation by thirty-three and one-third per cent.

Addresses were presented by the representatives of other associations, as follows: A. J. Gillingham, auditor of passenger traffic, Pennsylvania Railroad, representing the American Association of Accounting Officers; George A. Morton, general baggage agent, New York, New Haven & Hartford, representing the American Association of General Baggage Agents; George J. Alexander, president of the Canadian Ticket Agent's Association; Frank J. Burke, ticket agent at the Union Station, Chicago, representing the International Association of Ticket Agents, and H. M. Fletcher, passenger agent, Atchison, Topeka & Santa Fe, representing the American Association of Traveling Passenger Agents. An address was also presented by E. E. Clark, of the Interstate Commerce Commission on "American Passenger Service." Howard Elliott, chairman of the New York, New Haven & Hartford, also presented an address on the Natural Advantages and Summer Traffic of New England. Those in attendance at the convention were taken on an inspection trip over the electrified zone of the New York, New Haven & Hartford, between New York and New Haven, accompanied by General Manager Bardo nd Consulting Engineer Murray, who explained the principal features of the work.

Officers were elected as follows: President, Gerrit Fort, passenger traffic manager, Union Pacific, Omaha, Neb.; vice-president, Alexander Hilton, passenger traffic manager, St. Louis & San Francisco, St. Louis; secretary, W. C. Hope, general passenger agent, Central Railroad of New Jersey, New York. The next convention will be held at San Francisco in 1915.

Railway Painters Hold Annual Meeting.—The Master Car and Locomotive Painters' Association held its 45th annual convention at Nashville, Tenn., September 8th to 11th, inclusive, 292 members being present. The committee reports included the following subjects:

Tests; Finishing Steel Passenger Equipment; Interior Wood Finish for Passenger Coaches; Paint Shop Apprentice System; The Sand Blast as a Paint Remover and Standard Freight Car Lettering. Other papers were presented on Rust Inhibitive Paint and Non-Whiting Varnish for Locomotive Tenders.

Roadmasters' Annual Convention.—The Roadmasters' and Maintenance of Way Association of America, held its 32nd annual convention in Chicago, on September 8th to 11th, inclusive. Two hundred and twenty-five members were present. Committee reports under the following heads were presented and discussed:

New and Improved Track Tools; Proper Method of Rail Renewal; Proper Organization on Economical Use of Labor and Material; Proper Type of Track Accessories and Clearing and Policing the Right-of-Way.

Chicago was again selected for the 1915 convention.

The election of officers resulted in the choice of the following: President, P. J. McAndrews (C. & N. W.), Belle Plaine, Ia.; first vice-president, Coleman King (Long Island), Jamaica, N. Y.; second vice-president, M. Burke (C. M. & St. P.), Chicago; secretary and treasurer, L. C. Ryan (C. & N. W.), Sterling, Ill.; W. H. Kofmehl (C. M. & St. P.), Elgin, Ill. was elected a member of the Executive Committee for the full term of three years, and A. Grills (G. T.), St. Thomas, Ont., was elected to fill the vacancy on the Executive Committee caused by the election of Mr. McAndrews to the presidency.

The meeting of the Track Supply Association held in connection with the convention showed that organization to be in a flourishing condition. The officers for the past year have been: President, Walter H. Allen, Pennsylvania Steel Company; vice-president, E. M. Fisher, Fairbanks, Morse & Co.; secretary-treasurer, W. C. Kidd, Ramapo Iron Works, and members of the Executive Committee, Henry Fisher, Verona Tool Works, and L. P. Shanahan, American Steel & Wire Company. The exhibit in the corridors of the hotel was larger than ever and as in the past, was exclusively an exhibit of track appliances.

At the annual meeting held on September 10th, the following officers were elected for the ensuing year: President, E. M. Fisher, Fairbanks, Morse & Co.; vice-president, F. A. Preston, P. & M. Company; secretary-treasurer, W. C. Kidd, Ramapo Iron Works; director for one year, L. P. Shanahan, American Steel & Wire Co.; director for two years, R. A. Van Houten, Sellers Manufacturing Company.

TRAFFIC.

Efforts to Increase Revenues.—The railways of the United States are planning to launch a comprehensive movement for increases of revenues in all branches of their service following

President Wilson's recommendations that the railroads should be helped in every way possible in the present crisis.

Steps which are to follow as quickly as they can be worked out are:

"A general increase in passenger rates wherever practicable.

"Appeals to the Legislatures of the various States to repeal the full crew laws.

"Elimination of all free services and the making of charges for services rendered.

"Sale of properties not used or needed in transportation purposes."

"To contest in the Federal courts the right of State Commissions to compel the carriers to make allowances to the so-called tap or terminal lines, which allowances are characterized as 'rebates' by the Interstate Commerce Commission, and which are virtually directed to be abolished by that body.

"The repeal of the New Jersey grade crossing law.

"Restriction of free passenger transportation.

"The repeal of the two-cent fare laws in those States where such legislation is still in force.

"The repeal of other legislation which railroad officials regard as peremptory laws and which are not regarded as necessary as other legislation."

The Panama Exposition and the European War.—It was feared for some time after the declaration of the European war, that its influence would seriously cripple the success of the Panama-Pacific International Exposition, in that many of the foreign countries would fail to participate in this great event. The Fair authorities, however, although at times under considerable pressure, refused to postpone the Exposition and the wisdom of their decision is daily becoming more manifest. Not only will many European nations be represented at San Francisco, but out of forty foreign governments which have committed themselves to participate, not one has withdrawn. As a matter of fact, so rapid has been the recent progress in the construction of the city of foreign government pavilions and palaces, that each of them appears to be making an extra effort to surpass his neighbor.

A clearing house for travelers in San Francisco and other nearby cities during the Panama-Pacific International Exposition is represented in an organization being perfected by the Travelers' Aid Society of California. It is the aim of the Society to have trained workers meet every train and boat and give care, advice, assistance and—where welcome—protection to travelers, especially unescorted women and girls. To an information bureau, it will add a social service organization, if successful in its present plans. The California Society is modeled after that of New York which has assisted thousands of women and children annually, preventing not only inconvenience, but in many cases something worse. Moral protection will be one of the features of the 1915 exposition.

Isthmian Rail Traffic for the Fiscal Year.—The value of merchandise passing between New York and other Atlantic coast ports to San Francisco and other Pacific coast ports via the Panama Railroad has exhibited marked fluctuations during the last forty-five years, and with the opening of the Panama Canal to the traffic of the world has practically ceased to be a factor in the interchange of goods between the east and west coast sections of the United States.

In 1869, $70,000,000 worth of American products was moved across the isthmus via the Panama Railroad. In 1879, a decade after the opening of the first great transcontinental railway, the total dropped to $5,000,000, and by 1889 had further decreased to $3,000,000 in value. In the period from 1900 to 1906, during which time this transisthmian traffic was restricted by competition from the great coast-to-coast railways of the United States, but antedating the opening of the Tehuantepec Railway in Southern Mexico, the value of American merchandise moved over the Panama line gradually increased until it reached eight and one-half million dollars in 1902, receding again to five and three-quarters millions in 1906.

The Tehuantepec Railway was opened to traffic on January 1, 1907, and its influence on shipments via the Panama Railway was immediately reflected in the final figures for that year. For the entire fiscal year which ended June 30, 1907, the value of merchandise moving between New York and other Atlantic ports and San Francisco over the Panama Railroad was five and one-half million dollars, while for the last half of that year the value moved over the Tehuantepec line, including Hawaiian shipments, was over eleven million dollars. In the period from 1907 to 1913 traffic over both lines increased, domestic shipments via Panama showing a total of eighteen millions and those via Tehuantepec ninety-four million dollars. These figures are exclusive of American shipments to foreign countries, which included twelve million via Panama and six and one-half million via Tehuantepec in 1913.

In the fiscal year 1914, the value of domestic traffic moved over the Panama line was twenty-one million dollars, while that via Tehuantepec decreased to sixty-seven million, this falling off being due, in part, to the war in Mexico in the latter part of 1913. Shipments to foreign countries via the Panama line aggregated thirteen and one-half million and those via the Tehuantepec Railroad, six million.

Express Companies to Assist in the Development of South American Trade.—The American Express Company believing the commercial interests of the country to be particularly interested at the present time in the development of trade with South America, have taken the occasion to invite specific inquiries from exporters and importers with respect to exports or imports of Brazil, Argentina, Uruguay, Chili and Peru. This same Company has arranged to send two special representatives to these countries to make a careful and painstaking investigation of the opportunities for the extension of American business generally in South American fields. Both representatives have had many years' experience in their respective branches of foreign trade and are competent to deal with the questions arising in connection therewith.

Exporters and importers generally may avail themselves of the services of these men, who will give attention, in so far as may be practicable, to any inquiries within reasonable scope relative to foreign trade matters and conditions at the points they may visit. Communications on this subject should be addressed to the American Express Company, South American Department, 65 Broadway, New York.

Southern Railway Reduces Ticket Collectors on Passenger Trains.—On account of decreased passenger revenues due apparently to uncertainties occasioned by the European war, Southern Railway Company has decided to temporarily reduce to a minimum the number of ticket collectors employed on its passenger trains. This arrangement became effective October first.

LEGAL.

Important Recent Federal and State Legal Decisions Affecting the Carriers.

THE following analysis of the more important Federal and State Court decisions rendered during September and which relate to the operation, management and regulation of the railroads of the United States, constitutes a continuation of the record began in the July issue of the "Railway World." As is apparent, the necessary reference to Court records and authorities is given in each case and any further information desired, will be furnished upon request. Suggestions regarding these records will be gladly received as an effort is being made to make them of practical value to the legal departments of the various railways.

The Hours of Service Law.—(Federal, Western Washington.) The Federal Hours of Service Law provides that train crews shall have eight consecutive hours of rest in every twenty-four hours, except in case of casualty or unavoidable accident. Under this law a railroad company is not liable to prosecution where one of its train crews, through the happening of a serious accident to another train, was delayed and unable to make its run within the sixteen-hour period. The United States Circuit Court of Appeals at Seattle, Washington, has held the railroad company not liable, saying that the case comes within the exception of the law in case of casualty or unavoidable accident.—(United States v. Northern Pacific Railway Co., 215 F. 64.)

Icing Charges.—(Federal, Chicago, Illinois.) Where an interstate carrier published and filed with the Interstate Commerce Commission a tariff sheet, covering icing charges providing that the carrier, when requested, would furnish refrigeration, charging therefor the "actual cost including labor, but not less than $2.50 per ton of 2,000 lbs." it was held that though the provision for charging the actual cost was void for uncertainty, such invalidity did not invalidate the charge, and hence the carrier was entitled to charge $2.50 per ton.—(Cudahy Packing Co. v. Grand Trunk Western Ry., 215 F. 93.)

State Regulation of Railroad Rates.—(Federal, Eastern Arkansas.) Where a railroad company incorporated under the laws of a state has built and economically operates its lines of road, it is entitled to earn at least sufficient to pay operating expenses, and a law of the state which will not permit it to do so is confiscatory. On application of the railroad company for an injunction to restrain the enforcement of such a rate fixed by statute the court may exercise its discretion as to granting the same. The fact that the company did put the rate into effect and was unable to meet the necessary operating expenses should have some weight in the exercise of such discretion.—(Bellamy v. Missouri & N. A. R. Co., 215 Fed. 18.)

Liability for Injury to Employe.— (Federal, Eastern Kentucky.) Where a railroad company validly leases its lines to another railroad, the lessor company is not liable as an employer for injuries caused to employes of the lessee company by the latter's negligence.—(Gibson v. Chesapeake & O. Ry. Co., 215 Fed. 24.)

Persons on Track.—(Federal, Tenn.) Where decedent was discovered on the track by defendent's brakeman on the approaching train at the full distance ahead for which physical objects permitted a view of the track, and every possible means to stop the train was not immediately taken as required by Shannon's Code, Tenn., and decedent was struck and killed, the railroad company was liable.—(Cincinnati, N. O. & T. P. Ry. Co. v. M'Intyre, 215 Fed. 91.)

A Question of Damages.—(Federal, Cleveland, Ohio.) Where, in an action for injuries to a railroad brakeman under the Federal Employers' Liability Act, the court charged that if plaintiff's negligence was as great as the negligence of defendant there might be an equality of negligence, and therefore no substantial recovery of any amount of damages could be had, defendant was not prejudiced by another instruction that plaintiff's recovery, if any, should be reduced by such an amount as the jury found the negligence attributable to him bore in proportion to the negligence of defendant company, in that the latter might be construed to mean that if plaintiff was found twice as negligent as defendant he would recover one-half his damages.—(Penn. Co. v. Cole, 214 Fed. 949.)

No Recovery for Mental Suffering.—(Federal, Seattle, Wash.) The Statute of the State of Washington authorizes parents to recover for the wrongful killing of a minor child such damages as to the jury shall seem just under all the circumstances. Section 194 provides that no action for personal injury to any person, occasioning his death, shall abate, if he have a wife or child living or, leaving no wife issue, if he have dependent on him for support and resident within the United States at the time of his death, parents, etc., who are authorized to sue. Section 184 declares that a father, or, in case of his death or desertion of his family, the mother, may obtain an action as plaintiff for the death of the child. Held, that under such statute no recovery can be had by a parent for mental suffering, pain, and anguish sustained and suffered as the result of the wrongful killing of a minor child, but the damages are limited to the pecuniary loss resulting from such death.—(Penoza et ux. v. Northern Pac. Ry. Co., 215 Fed. 200.)

Duty to Operate Road.—(Federal, Southern Iowa.) While as a general rule it is the duty of a railroad company to maintain its entire line of road in a reasonably safe and operative condition, and to operate the same, there may be conditions which will excuse the full performance of this duty, and justify the abandonment of a branch or connecting line which cannot be operated without great loss and for which there is no great public necessity. Defendant railroad company owned and operated an electric line of road 125 miles long which was of large public importance. It also owned and operated by steam a connecting line 27 miles long which was not equipped for operation by electricity. This line was little used and there was little public necessity for its operation. It did not pay operating expenses, was in a dilapidated and dangerous condition for use, and required the expenditure of a large amount of money to rehabilitate it. Defendant was hopelessly insolvent, and a suit for foreclosure of mortgages on its property was pending in which receivers had been appointed who had operated the steam line at a large loss, and under an order of the court had tried unsuccessfully to sell the same. Neither defendant nor the receivers could obtain the money necessary to put it in safe operative condition and to require its operation by any purchaser of the entire property would seriously embarrass, if not prevent, the successful operation of the electric line. Held, that under such conditions neither defendant nor a purchaser was under the duty to continue to operate such line.—(State of Iowa v. Old Colony Trust Co. of Boston, 215 F. 307.)

Tunnels Not Taxable.—(New York.) Tunnels attached to the power house of a rapid transit railroad where the right to construct a tunnel is based solely on the ownership of the fee in the land through which it is built, are not taxable as a special franchise.—(Interborough Rapid Transit Co. v. Purdy, 148 N. Y. S. 1074.)

Reservation in Grant to Railroad Company.—(New York.) The rule that if one conveys land, leaving other land belonging to him to which he can have access only by passing over the land granted, a way of necessity is reserved in the grant obtains though the grant is for a railroad right of way.—(Heaton v. New York Cent. & H. R. R. Co., 149 N. Y. S. 71.)

Rights of Stockholders.—(New York.) Under its articles of association providing that, after the prescribed dividend is paid on the preferred stock, it is entitled to no further share of the profits, an extra dividend declared by a railroad company after payment of the preferred stock dividend held to belong to the common stockholders, so that the preferred stockholders did not have the right to participate therein.—(United States v. Union Pac. R. Co., 212 N. Y. 92.)

Death of Railroad Engineer.— (Connecticut.) Where an experienced locomotive engineer who was familiar with engines and tenders and their proportions, and who, not only by reason of his frequent and recent service over the portion of the road where he was killed by coming in contact with an electric wire while passing from the cab over the top of the tender in the course of his duties at an overhead bridge where the wire was necessarily lower than usual, but by reason of special notices given him, knew and appreciated the danger, he assumed, by continuing in his employment, those risks connected therewith which had remained unchanged and unenhanced by any new and negligent act of defendant; and hence there could be no recovery for his death.—(Farley v. New York, N. H. & H. R. R. Co., 91 A. 650.)

Condemnation of Railroad Right of Way.—(Pennsylvania.) It is essential to the condemnation of land for a railroad right of way that there shall be a preliminary survey made and reported with necessary maps and profiles, and the selection and adoption of a surveyed line by the directors for the location of the proposed railroad, and that the owner shall be compensated for damages sustained.—(Johnston v. Delaware, L. & W. R. Co., 91 A. 618.)

Readjustment of Rates.—(Nebraska.) Evidence that rates charged by a railroad company for shipments to a particular point are higher than rates charged between the initial points and two other points will not of itself support a finding and order reducing and readjusting the rates. It must be alleged and proved that the rates complained of are unreasonble, unjust, or discriminatory.—(Byington v. Chicago, R. I. & P. R. Co., 148 N. W. 148.)

Injury Caused by Broken Rail.—(Oregon.) In an action for injuries to a passenger, an instruction to the jury that a railroad carrying passengers is not an insurer against accident nor responsible for accident which is unavoidable, but is held to the utmost care which can be exercised by human prudence, skill, and diligence, is not error.—(Graham v. Corvallis & Eastern R. Co., 142 P. 774.)

Federal Employers' Liability Act.—(Oregon.) An action for an injury to a brakeman in a switching crew, whose general duties were to use a locomotive in moving indiscriminately cars used in local traffic and those carrying goods destined to and received from other states, the injury having occurred when plaintiff was coupling the locomotive to a private car used wholly within the state, is within the Federal Employers' Liability Act (35 Stat. 65), relating to the liability of common carriers engaged in commerce between any of the several states to persons injured in their employ.—(Oberlin v. Oregon-Washington R. & Navigation Co., 142 P. 554.)

Snow Slide in Cascade Mountains.— (Wash.) One of defendant's passenger trains over the Cascade Mountains became stalled in a snowstorm and was blocked for some days on a passing track constructed at the west end of a tunnel along the mountain side, and, while in such position, was carried down the mountain by an avalanche and destroyed and decedent and other passengers killed and injured. Held, that defendant was not guilty of negligence concurring with the act of God in adopting the shelf along the mountain side for its roadbed, in failing to construct a snowshed over its tracks, in taking the train through the tunnel and placing it on the passing track on the mountain side, in failing to move the train under snowsheds, in failing to move it back to spurs opposite a flat area, in failing to move it into the tunnel, or in failing to notify passengers on or before the time of the accident that it did not intend to move the train from the mountain side, instead of leading them to believe that it might start for its destination at any time.—(Topping v. Great Northern Ry. Co., 142 P. 424.)

LEGISLATION.

Effort to Repeal Pennsylvania's Extra Crew Law.—President Rea, of the Pennsylvania Railroad has appealed to the people of Pennsylvania to ask their representatives in the next legislature to repeal the Extra Crew Law. Mr. Rea's appeal, which has been posted in all stations on the railroad and on all employes' bulletin boards, reads as follows:

"It is in the interest of the public—whose chief concern is good service and safety—that the Extra Crew Law now on the Statute books of Pennsylvania and other States be repealed.

"This law causes a waste of $1,100,000 annually in the employment of unnecessary men on the Pennsylvania System alone.

"No one is more concerned than the Pennsylvania Railroad Company in securing maximum safety on its lines. Every train on this Railroad has a full crew, and this extra expenditure adds nothing to safety or public convenience. The same money had much better be spent to remove grade crossings, improve tracks, signals, and bridges, and buy steel cars.

"This Extra Crew Law, which compels unnecessary expenditures, is one of the factors which menaces the ability of this Company to pay present rates of wages to that great body of employes whose activities are needed.

"The Public Service Commission should see to it that all trains are properly manned. Such action would amply protect employes and the public.

"We appeal to the people in their own interest, we appeal to our employes in their best interest, to ask their representatives in the next Pennsylvania Legislature to repeal the Extra Crew Law.

"SAMUEL REA, President,
"Pennsylvania Railroad Co."

Progress in Anti-Trust Legislation.—Two of the three measures constituting the administration's anti-trust program, have been concluded. These are the Federal Trade Commission Act and the Federal Anti-Trust Bill. The remaining measure, known generally under the designation of the "Bonds and Stocks" bill, has been put aside until the next session of Congress, when, it is understood, it will be taken up for consideration. It is also rumored in Washington that at the next session of Congress the party now in power will undertake to re-establish the Commerce Court, recently abolished, and that such court, if reestablished, will instead of holding its sessions only in Washington be authorized to sit at various important cities, among which are mentioned: San Francisco, Denver, Chicago, St. Louis, New Orleans, Cincinnati, New York, Boston and Washington. It is said that the idea of authorizing sessions of the court to be held in these various cities is for the benefit of the shippers, rather than for the convenience of the railroads.

RESIGNATIONS.

Executive.

Frank W. Blair, receiver, Pere Marquette Railway.

Legal.

Reuben A. Miller, chief counsel, Louisville, Henderson & St. Louis Railway.

Edward D. Robbins, general counsel, New York, New Haven and Hartford Railroad.

C. L. Sivley, general attorney, Illinois Central Railroad.

Accounting.

W. L. Bird, auditor, Norfolk Southern Railroad.

B. A. Neisser, freight claims auditor, Grand Trunk Railway.

H. L. Penny, general auditor, Canadian Pacific Railway.

Engineering and Mechanical.

K. E. Kellenberger, supervisor of signals, Chicago and North Western Railroad.

Harry G. Love, general car foreman, Chicago and Eastern Illinois Railroad.

Nelson M. Markley, superintendent of bridges and buildings, Peoria and Eastern Division, Big Four Railroad.

W. D. Minton, master car builder, Texas and Pacific Railroad.

F. M. Patterson, engineer, Missouri District, Chicago, Burlington and Quincy Railroad.

W. A. Rogers, master mechanic, Los Angeles Division, San Pedro, Los Angeles & Salt Lake Railroad.

E. A. Sweeley, supervisor of car repairs, Atlantic Coast Line.

W. H. Willis, signal engineer, Erie Railroad.

Operation.

George Crumbo, general foreman of shops, Chicago, Indianapolis & Louisville Railway.

William Downie, general superintendent, Atlantic Division, Canadian Pacific Railway.

George P. Johnson, general manager, Chesapeake and Ohio Railroad.

J. F. Jones, superintendent, Grand Trunk Railway.

M. E. Sebree, trainmaster, Cincinnati, New Orleans & Texas Pacific Railway.

John L. Terry, general manager, Denver, Laramie & Northwestern Railroad.

A. N. Williams, trainmaster, Missouri, Kansas and Texas Railway.

Traffic.

H. G. Alexander, district passenger agent, Chicago, Indianapolis and Louisville Railway.

O. C. Carter, general freight agent, Chicago, Indianapolis and Louisville Railroad.

H. A. Cooper, district passenger agent, Missouri Pacific-Iron Mountain System.

E. L. Dalton, general agent, traffic department, Minneapolis & St. Louis Railroad.

B. J. Libbe, general agent, freight department, Chicago and Alton Railroad.

F. P. Jeffries, general agent, Chicago and Eastern Illinois Railroad.

L. F. Malum, soliciting freight agent, Queen and Crescent Route.

B. M. Waldron, freight claim agent, Cincinnati, Hamilton and Dayton Railroad.

Purchasing.

Daniel Dowing, general storekeeper, Chicago and Alton Railroad.

George A. Secor, general storekeeper, Minneapolis and St. Louis Railroad.

ELECTIONS AND APPOINTMENTS.

Executive.

G. K. Keeks, president, San Francisco-Oakland Terminal Railways. Headquarters, Oakland, Cal.

T. J. Kennedy, president and general manager, Algoma Central & Hudson Bay and the Algoma Eastern Railroads. Headquarters, Sault Ste. Marie, Ont.

John Leslie, comptroller, Canadian Pacific Railway. Headquarters, Montreal, Que.

S. L. Schoonmaker, director, American Locomotive Company.

Frank Scott, vice-president, in charge of finances, Central Vermont Railroad.

David Van Alstyne, assistant to the vice-president in charge of operation, New York, New Haven and Hartford and the Central New England Railroads. Headquarters, New York.

J. A. D. Vickers, vice-president and general manager, American Express Company.

Felix M. Warburg, member of the Board, Baltimore and Ohio Railroad.

Legal.

Thomas Hackney, general attorney, Missouri Pacific and the St. Louis Iron Mountain and Southern. Headquarters, Kansas City, Mo.

James P. Helm, chief counsel, Louisville, Henderson & St. Louis Railway. Headquarters, Louisville, Ky.

Farrar L. McCain, general counsel, Midland Valley Railroad. Headquarters, Muskogee, Oklahoma.

E. G. Merriam, assistant general solicitor, Missouri Pacific-Iron Mountain System. Headquarters, St. Louis, Mo.

Thomas L. Phillips, valuation attorney, Missouri Pacific and the St. Louis, Iron Mountain and Southern Railway. Headquarters, St. Louis, Mo.

B. I. Spock, general solicitor, New York, New Haven and Hartford Railroad. Headquarters, New Haven, Conn.

E. J. White, general solicitor, Missouri Pacific-Iron Mountain System. Headquarters, St. Louis, Mo.

Financial.

S. N. Rice, assistant secretary and assistant treasurer, Missouri Pacific. Headquarters, New York.

H. L. Utter, secretary and treasurer, Missouri Pacific. Headquarters, New York.

Accounting.

L. A. Farquhar, auditor, Norfolk Southern Railway. Headquarters, Norfolk, Va.

J. R. McCoy, assistant auditor for receivers, Denver, Laramie & Northwestern Railway. Headquarters, Denver, Colo.

W. J. Moule, auditor of disbursements, Canadian Pacific Railway. Headquarters, Montreal, Que.

F. E. Shrimpton, general auditor, Canadian Pacific Railway. Headquarters, Montreal, Que.

J. B. Wagner, auditor, Toledo and Ohio Central Railroad. Headquarters, Toledo, Ohio.

Engineering and Mechanical.

J. Q. Anderson, roadmaster, Atlantic Coast Line. Headquarters, Petersburg, Va.

O. F. Barnes, division engineer, New York Division, Erie Railroad. Headquarters, Jersey City, N. J.

C. H. Blackman, principal assistant engineer, Louisville and Nashville Railroad. Headquarters, Louisville, Ky.

Elmer H. Brown, roadmaster, Northern Pacific Railway. Headquarters, Dilworth, Minn.

Arthur B. Caldwell, division engineer, Allegheny and Broadford Divisions, Erie Railroad. Headquarters, Salamanca, N. Y.

N. A. Camera, supervisor of Bellwood Division, Pennsylvania Railroad. Headquarters, Bellwood, Pa.

T. S. Davey, shop superintendent, Erie Railroad. Headquarters, Buffalo, New York.

Ransom L. Dyke, division engineer, New York Susquehanna and Western Railroad. Headquarters, Jersey City, N. J.

E. S. FitzSimmons, mechanical superintendent, Erie Division, Erie Railroad. Headquarters, New York.

Frank L. Fox, general foreman, car department, Pere Marquette. Headquarters, Detroit, Mich.

Charles James, mechanical superintendent, Ohio Division, Erie Railroad. Headquarters, New York.

Harold Knight, signal engineer, Erie Railroad. Headquarters, Jersey City, N. J.

W. S. Johns, Jr., supervisor, Division No. 21, Pennsylvania Railroad. Headquarters, Tyrone, Pa.

L. F. Lonnbladh, engineer maintenance of way, Missouri, Kansas & Texas Railway. Headquarters, Dallas, Texas.

William R. McMunn, general car inspector, New York Central and Hudson River Railroad. Headquarters, Albany, N. Y.

J. V. Mayhall, assistant storekeeper, Baltimore and Ohio Railroad. Headquarters, Parkersburg, W. Va.

M. A. Mulligan, general yard inspector, Lehigh Valley Railroad. Headquarters, South Bethlehem, Pa.

F. H. Murray, master mechanic, Erie Railroad. Headquarters, Jersey City, N. J.

E. H. Peck, engineer, Missouri District, Chicago, Burlington and Quincy Railroad. Headquarters, St. Louis, Mo.

W. W. Portzer, assistant supervisor, Middle Division, Pennsylvania Railroad. Headquarters, Mifflin, Pa.

A. E. Reid, supervisor of signals, Chicago and North Western Railway. Headquarters, Boone, Iowa.

L. D. Richards, master mechanic, Arkansas Division, Rock Island Lines. Headquarters, Little Rock, Ark.

Frank Ringer, engineer maintenance of way, Missouri, Kansas and Texas Railway. Headquarters, Parsons, Kansas.

William Schmalzreid, master car builder, Texas and Pacific Railroad. Headquarters, Marshall, Texas.

William Schuman, general foreman of shops, Chicago, Indianapolis and Louisville Railway. Headquarters, Lafayette, Ind.

George Searle, master mechanic, Los Angeles Division, San Pedro, Los Angeles and Salt Lake Railroad. Headquarters, Las Vegas, Nev.

G. A. Secor, general storekeeper, Chicago and Alton Railroad. Headquarters, Bloomington, Ill.

S. S. Senter, superintendent of bridges and buildings, Wheeling and Lake Erie Railroad. Headquarters, Brewster, Ohio.

W. H. Seward, assistant engineer, Chicago, Burlington and Quincy Railroad. Headquarters, St. Joseph, Mo.

O. E. Shaw, general car foreman, Chicago & Eastern Illinois Railroad. Headquarters, Danville, Ill.

W. H. Snyder, master mechanic, Erie Railroad. Headquarters, Stroudsburg, Penna.

George Strasding, roadmaster, Pasco Division, Northern Pacific Railway. Headquarters, North Yakima, Wash.

George Thibaut, master mechanic, Erie Railroad. Headquarters, Port Jervis, N. Y.

Paul A. G. Tolmot, roadmaster, South Bend and Grays Harbor branches, Northern Pacific Railroad. Headquarters, Tacoma, Wash.

A. G. Trumbull, general mechanical superintendent, Erie Railroad. Headquarters, New York.

C. M. Wester, storekeeper, Baltimore and Ohio Railroad. Headquarters, Parkersburg, W. Va.

William V. Wicks, road foreman of engines, Northern Pacific Railway. Headquarters, Jamestown, N. D.

J. H. Wood, supervisor of locomotive operation, Rock Island Lines. Headquarters, El Reno, Okla.

C. S. Yeaton, road foreman of equipment, Chicago, Rock Island and Pacific Railway. Headquarters, El Reno, Okla.

C. A. Zweibel, supervisor of car repairs, Atlantic Coast Line Railroad. Headquarters, Wilmington, N. C.

Operation.

A. M. Acheson, superintendent, Trinity District, Missouri, Kansas and Texas Railroad. Headquarters, Trinity, Texas.

Stuart A. Allen, general manager, Continental Line and Central States Despatch.. Headquarters, Cincinnati, Ohio.

R. T. Arthur, trainmaster, Missouri, Kansas and Texas Railway of Texas. Headquarters, Denison, Texas.

T. C. Blackwell, trainmaster, Cincinnati, New Orleans and Texas Pacific Railway. Headquarters, Oakdale, Tenn.

Joseph H. Butler, superintendent, Western Department, National Express Company. Headquarters, Chicago, Ill.

B. C. Byers, superintendent of terminals, Cleveland, Cincinnati, Chicago & St. Louis Railway. Headquarters, Indianapolis, Ind.

B. C. Cooper, trainmaster, Michigan Division, Vandalia Railroad. Headquarters, Logansport, Ind.

D. Dale, superintendent, Bevier & Southern Railroad. Headquarters, Bevier, Mo.

M. J. Foley, superintendent, Casper Division, Chicago, Burlington and Quincy Railroad. Headquarters, Casper, Wyo.

J. W. Foote, trainmaster, the Erie Railroad. Headquarters, Susquehanna, Pa.

John B. Glasgow, trainmaster, Northwestern Pacific Railway. Headquarters, Jamestown, N. D.

H. C. Grout, general superintendent, Atlantic Division, Canadian Pacific Railway. Headquarters, St. John, N. B.

J. F. Hickey, superintendent, McAlester District, Missouri, Kansas and Texas Railway. Headquarters, Muskogee, Okla.

C. H. Hinton, superintendent, Orange & Northwestern Railroad. Headquarters, Orange, Texas.

E. D. Hogan, superintendent of transportation, New Orleans, Mobile and Chicago Railroad. Headquarters, Laurel, Miss.

F. Jones, trainmaster, Cleveland, Cincinnati, Chicago and St. Louis Railroad. Headquarters, Terre Haute, Ind.

E. J. Lampert, trainmaster, Cincinnati terminals, Baltimore and Ohio Southwestern.

D. B. Lantry, superintendent of the Sioux City Division, Great Northern Railroad. Headquarters, Sioux City, Iowa.

A. D. Lightner, general manager for the receiver, New Orleans, Texas and Mexico Railroad and the Louisiana Southern. Headquarters, New Orleans, La.

O. E. Linn, trainmaster and road-foreman of engines, Peoria Division, Vandalia Railroad. Headquarters, Decatur, Ill.

T. F. McCarthy, trainmaster, Lehigh Valley Railroad. Headquarters, Jersey City, N. J.

F. J. McKee, superintendent of terminals, Grand Trunk Railroad. Headquarters, Port Huron, Mich.

W. F. Martin, inspector of operation, Erie Railroad. Headquarters, Cleveland, Ohio.

W. D. Mason, trainmaster, Great Northern Railroad. Headquarters, Willmar, Minn.

J. B. Mertes, inspector of yards and stations, Wheeling and Lake Erie Railroad. Headquarters, Toledo, Ohio.

C. M. Mitchell, trainmaster, Cincinnati, New Orleans and Texas Pacific Railway. Headquarters, Danville, Ky.

M. A. Mulligan, general yard inspector, Lehigh Valley Railroad. Headquarters, South Bethlehem, Pa.

W. E. Price, general manager, Carolina & Yadkin River Railway. Headquarters, High Point, N. C.

J. B. Purkhiser, trainmaster, Cincinnati and Louisville District, Baltimore and Ohio Southwestern.

James P. Rogers, station superintendent, New Union Station. Headquarters, Spokane, Wash.

J. C. Roth, assistant superintendent Northern Pacific Railway. Headquarters, North Yakima, Wash.

W. S. Smith, assistant general freight agent, St. Louis, Brownsville & Mexico. Headquarters, Kingsville, Texas.

C. A. Thanheiser, superintendent, Smithville District, Missouri, Kansas and Texas Railway. Headquarters, Smithville, Texas.

G. E. Votaw, superintendent, Mesaba-Superior Division, Great Northern Railway. Headquarters, Superior, Wis.

B. O. Wedge, chief dispatcher, Cincinnati, New Orleans and Texas Pacific Railway. Headquarters, Danville, Ky.

W. B. Wells, general agent, Frisco Lines. Headquarters, Dallas, Texas.

Phillip T. White, superintendent of terminals, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Cleveland, Ohio.

E. H. Zeigler, superintendent, Cairo Division, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, Terre Haute, Ind.

Traffic.

B. L. Abberger, soliciting freight agent, Atlanta, Birmingham and Atlantic Railroad. Headquarters, Tampa, Fla.

Gordon Alexander, general eastern freight agent, Cleveland, Cincinnati, Chicago and St. Louis Railway. Headquarters, New York.

J. M. Andrews, live stock agent, Texas and Pacific Railroad. Headquarters, Ft. Worth, Texas.

H. A. Ansaldo, traveling freight agent, Georgia Railroad. Headquarters, Macon, Ga.

J. M. Arnold, traveling freight agent, Chicago, Milwaukee and St. Paul Railway. Headquarters, Chicago, Ill.

J. M. Ball, assistant general freight agent, International and Great Northern Railroad. Headquarters, Houston, Texas.

O. P. Bennett, general agent, traffic department, Chicago and Alton Railroad. Headquarters, Kansas City, Mo.

C. E. Bode, general freight agent, Illinois Traction System. Headquarters, Houston, Texas.

W. C. Bowhay, freight claim agent, Cincinnati, Hamilton and Dayton Railway. Headquarters, Cincinnati, Ohio.

Frank Carnahan, commercial agent, Chicago and Alton. Headquarters, Peoria, Ill.

J. M. Connell, general passenger agent, Kansas Southwestern Railroad.

E. L. Dalton, general agent, freight department, Chicago and Alton Railroad. Headquarters, Chicago, Ill.

R. J. Daniels, division freight and passenger agent, Chicago, Milwaukee and St. Paul. Headquarters, Butte, Mont.

F. R. Darby, district passenger agent, Western Maryland Railroad. Headquarters, Pittsburgh, Penna.

W. J. Dibble, general agent, Chicago and Alton Railroad. Headquarters, Minneapolis, Minn.

H. F. Garrett, soliciting freight agent, Queen & Crescent Route. Headquarters, Jacksonville, Fla.

Wm. T. Grier, general traffic manager, Lehigh Valley Railroad. Headquarters, New York.

R. N. Golden, general agent, Traffic Department, Minneapolis and St. Louis Railway. Headquarters, Cincinnati, Ohio.

George E. Herring, division passenger agent Louisville and Nashville Railroad. Headquarters, Nashville, Tenn.

A. J. Hillman, general agent, freight department, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Seattle, Wash.

W. P. Hinton, assistant passenger traffic manager, Grand Trunk Railway System. Headquarters, Montreal, Que.

F. B. Humston, district passenger agent, Chicago, Indianapolis and Louisville Railway. Headquarters, Indianapolis, Ind.

C. E. Jordan, Jr., contracting agent, Louisville and Nashville Railroad. Headquarters, Knoxville, Tenn.

G. F. Kay, traveling freight agent, Queen & Crescent Route.

W. H. Kinard, commercial agent, Georgia Railroad. Headquarters, Spartanburg, S. C.

J. R. Koontz, general freight agent, Kansas Southwestern Railroad. Headquarters, Topeka, Kansas.

S. MacClurkan, commercial agent, Chicago, Milwaukee and St. Paul Railroad. Headquarters, Milwaukee, Wis.

D. W. McDonald, city passenger agent, Louisville and Nashville Railroad. Headquarters, Atlanta, Ga.

C. H. Mann, district passenger agent, Louisville and Nashville Railroad. Headquarters, Pensacola, Fla.

H. H. Milner, traveling passenger agent, Louisville and Nashville Railroad. Headquarters, Houston, Texas.

W. C. Mueller, general agent, Chicago and Alton Railroad. Headquarters, Milwaukee, Wis.

C. R. Murray, western passenger agent, Chicago and Alton Railroad. Headquarters, Kansas City, Mo.

W. P. Overbay, district passenger agent, Missouri, Kansas and Texas Railway. Headquarters, Pittsburgh, Pa.

J. R. Shannon, general agent, traffic department, Minneapolis and St. Louis Railroad. Headquarters, Chicago, Ill.

F. J. Sizemore, traffic manager, Carolina & Yadkin River Railway. Headquarters, High Point, N. C.

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The Board of Directors of the United States Rubber Company has this day declared from its net profits a quarterly dividend of Two per Cent. (2%) on the First Preferred Stock, a quarterly dividend of One and One-half Per Cent. (1½%) on the Second Preferred Stock, and a quarterly dividend of One and One-half Per Cent. (1½%) on the Common Stock of the Company, to Stockholders of record at 3 P. M. on Thursday, October 15th, 1914, payable without closing of the Transfer Books, October 31st, 1914.

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Railway World

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Important Developments in the Transportation Field

FINAL ARGUMENTS IN ADVANCE RATE CASE

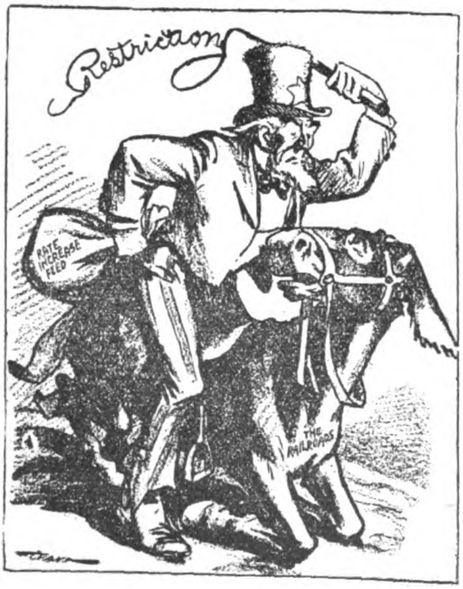
On October 30th, the final arguments in the so-called Eastern advance rate case were made. In view of the fact that the carriers' third appeal for relief was in the nature of a supplementary hearing, a quick decision was confidently expected. The Commission, however, believes in taking its time, even though the whole country is on edge awaiting the results of its conclusions. The railroads have presented such a strong case, however, that it is almost the universal belief that the decision when rendered, will be favorable. In the October issue reference was made to the opening address by President Daniel Willard, of the Baltimore and Ohio, and the statements made by Mr. George M. Shriver, vice-president of the same road, by Charles A. Conant, of New York, author of many authoritative works on finance; and to the letter sent by George B. Caldwell, president of the Investment Bankers' Association, to all the members of that organization, urging a hearty support of the railways' plea for an increase in rates.

Others who have since testified before the Commission include Mr. Samuel Rea, president of the Pennsylvania Railroad; Mr. Frederick Strauss, of the Investment Bankers' Association; Mr. O. E. Butterfield, assistant general solicitor of the New York Central Lines; Mr. George Stuart Patterson, general solicitor of the Pennsylvania Railroad; Mr. J. L. Minnis, general solicitor of the Wabash Railroad, and Mr. George F. Brownell, vice-president of the Erie Railroad.

Mr. Strauss had back of him a Bankers' committee, representing leading financial institutions in all sections of the country. He pointed out that the railway situation was particularly critical on account of recent war developments. We are a debtor nation and at the present time owe England about $250,000,000. To quote from the statement of Mr. Strauss:

> The great danger that lies before us is this: Up to the present time there has been a large investment in American securities abroad. The figures, Sir George Paish tells me, are, conservatively, six thousand million dollars, not a lesser amount, and the very large predominating majority of those are railroad securities.
>
> Sir George Paish thinks that England should continue to buy American securities, for the reason that, strange as it may seem, as he says, the greatest danger is by these defaults of the world over—Brazil, Argentine, Canada and Mexico, with a possibility of further defaults—the European investor may become so panic-stricken in regard to his investments that he will begin to hoard and the gold will disappear. If that happens, of course the whole civilized world is going to collapse immediately, so far as credit is concerned.
>
> If, however, American railroad securities will be accepted by the European investor as the one thing in which his savings are safe, the one thing that he can turn to, the great railroad trade of the world, which means most of our trade, because, while our trade has diminished, it will gradually increase, and even though less than formerly, it will be a large proportion of the world's trade—if such security can be created, giving British investors thorough confidence that the American railroad security is the only thing that offers him protection, the effect upon this country is going to be magical, whereas the opposite opinion would be disastrous.
>
> I believe that the mere granting of a five per cent increase in Official Classification territory will produce a very important effect in this respect, that it will cause the European and American investor, both, to believe that, in time of great emergency, the Interstate Commerce Commission

BALAAM AND HIS MULE



The Railroads—Say, how do you expect me to travel with you on my back and nothing in my stomach?
—From the *Baltimore American.*

GEORGE F. BROWNELL.

Vice-President, Erie Railroad, Who Delivered the Closing Address in Eastern Advance Rate Case.

will extend whatever protection lies within its power to the railroads to maintain their credit, and leave it to the future, if earnings under that ruling increase beyond reason, to make whatever reduction is then deemed wise and just, and if such a reduction be then made, I think it would produce a great deal more of confidence because the investor would know that at a time of emergency he would be protected.

Both as a matter of self-interest to the railroads and to the public, if money has gone honestly and with reasonably good judgment into a property the rates of which are regulated by public authority and over which the management has no control, so that its profits are more or less limited, I do believe any investor has a right to expect broadly speaking and not taking individual cases, that he shall have a continued return upon that investment.

He has not the opportunity to get, neither has the management to give him, extraordinary big profits in good years to compensate him for diminished profits in bad years. It has become, under Government regulation, a question of Government protection; not a guarantee, but certainly Government regulation implies Government protection.

It may be thought by those who take a narrow view of the subject that it is not a part of the duty of the Interstate Commerce Commission to concern itself with the prices of stocks or bonds. Whatever may be true in ordinary times, and in my judgment the Interstate Commerce Commission can never safely ignore this factor, under present conditions of stress and strain it is certainly the duty of the Interstate Commerce Commission to do everything in its power to prevent low prices of railroad and, indirectly, therefore, of other securities.

And I say "other securities" because the prices of other securities almost invariably take their tone from that of railroad securities. These furnish the standard of prices. If the prices of railroad securities are depressed, so will be those of other industries.

The country cannot prosper unless the railroads prosper. This is axiomatic; but at the present time it is truer than ever before. It is needless to point out that corporations seeking to finance themselves cannot sell their securities at prices above the market. It is, therefore, distinctly to the interests of all the people of this country, shippers and travelers and others, that the Interstate Commerce Commission should do everything in its power to maintain a high level of prices for railroad securities.

It may seem to the Commission that this is a very much overdrawn picture and that an increase of five per cent in rates to be charged by the roads in Official Classification territory cannot be the sole factor in determining whether this country is to proceed with the orderly re-establishment of its damaged credit and business structure, or whether everything is to go to ruin.

This is unquestionably so; but it is also true that the other remedial measures which may be necessary are not within the power of the Interstate Commerce Commission to grant or withhold. Further remedial measures will in my judgment have to be undertaken, some by the banking interests of the country, some perhaps by the United States Government, and some by the State Governments and public service commissions, but the only remedy that is within the power of the Interstate Commerce Commission to provide is a rate increase to the full extent asked for.

Railroad securities have so far fallen into disrepute that even receivers' certificates, until recently regarded as unassailable investments, have in some cases been renewed only by means of forced extensions.

The crisis is immediate and the remedy must be immediate also. It is of no use now to speak of economies of operation. These should be undertaken and must be undertaken in due course. Immediate relief, in part, lies within the power of the Commission to grant, and this, in my judgment, it ought to grant in order to re-establish confidence in American railroad securities and to check the further export of gold.

The closing argument for the carriers was made by Vice-President George F. Brownell, of the Erie Railroad, who spoke in part as follows:

I do, however, contend that in determining whether the carrier's charges for its transportation services are just and reasonable, the Commission have the right, and it is their duty to take into consideration, among other things, the adequacy of the net operating income derived therefrom, its sufficiency to enable the carrier properly to perform its important quasi-public functions. and to secure the new capital necessary therefor. and for the other related matters of public interest and welfare.

If there are several methods by which the Commission lawfully can enable the carriers to find relief from the existing inadequacy of their revenues and one of these methods will also promote the welfare of, or safeguard public or private interests, while the adoption of the other method will either not accomplish that result or be doubtful in its effect, then I say the Commission should take these matters into consideration and should adopt the method of relief which will inure to the benefit of all.

That a crisis now exists in the affairs of these railroads, and that their credit, seriously impaired, as we believe, before the war started, principally because of inadequate operating income, is now confronted by a grave emergency, would seem to be but plain truths.

The crisis which confronts the railroads has been emphasized, has been aggravated and has been made more clear and certain by the war, but the war does not constitute and did not alone create the existing crisis in our affairs. That crisis existed before the war and is reflected in the records of their operations and the long-continued increase in expenses and accompanying reduction in net revenues and income, whereby the railroad industry has been forced to become an industry of constantly decreasing returns.

In the majority report delivered bv Commissioner Harlan on the former hearing, it was stated that the credit of our railroads has undoubtedly suffered in recent years, but that this was largely from causes that were independent of their rates. The majority were inclined to attribute this loss of credit and impairment of the confidence of the public in the stability of railroad securities largely to the mismanagement of some great railroad systems of international repute, to the circumstances leading up to the appointment of receivers for certain other companies, to the interlocking of railroad systems with weak lines, and other causes not related to the adequacy of rates or revenues.

However, upon the rehearing it now appears by the uncontradicted testimony of Mr. Strauss and others, that in their opinion and in the opinion of others who are best qualified to judge, while the considerations referred to in the majority report have operated to a relatively slight extent, yet the principal cause for the impairment of railroad credit and the impaired confidence in the value and stability of railroad securities has been the inability of the railroad companies to increase their rates to the extent necessary to secure to them reasonably adequate net revenues.

The majority report of the Commission also made certain tentative suggestions as to measures which might be taken by the carriers to secure additional revenues and thereby "to meet the situation" otherwise than by resorting to a general advance in their freight rates.

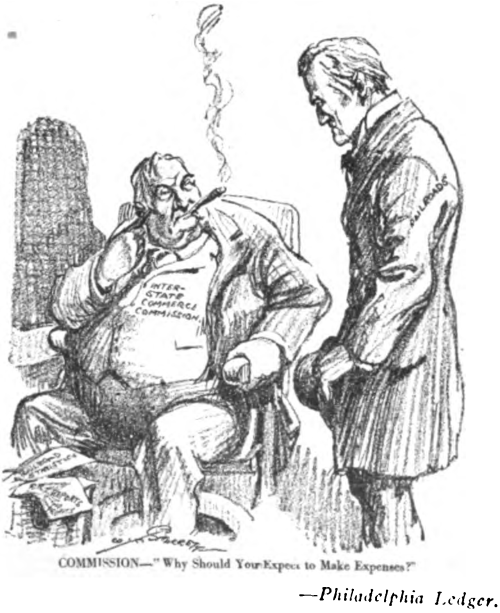
As shown in the carriers' petition and by the evidence of Mr. Willard and other witnesses, the carriers have given and are giving earnest attention to the recommendations and suggestions of the Commission in those regards, but one of the new factors in the case which we think the Commission should take into consideration is that the hopes of increased revenue from most of these sources, instead of having an early realization, will not end in fruition in time to afford a relief for the present situation and crisis, even though they happily may at some more remote period result in partial realization.

It is believed by those responsible for the management of the carriers that they cannot safely rely upon any expectation that the additional revenues which may ultimately be secured by the adoption of means other than a general advance in freight rates can be obtained in the near future; or that when secured any such additional revenues will be adequate to meet the reasonable needs of the carriers for increased revenues in the present situation.

We hope and believe that, upon all the facts which the whole record now contains, the Commission will find that the proposed rates are no more than just and reasonable and allow them to become effective, before it is too late; but in case the Commission determine to the contrary, should they not, in that event, as a matter of sound discretion (even if they are of opinion that the provision of the statute in that regard which I have quoted is not mandatory) adopt the course indicated by the statute, instead of requiring the carriers to await the outcome of the attempted application of the tentative suggestions as to substituted measures which might be taken by them to secure additional revenue? Would not that be the better, proper and safer course to pursue in such contingency—particularly in view of the fact that the carriers believe that what can be accomplished through such suggested substitute measures will be too inadequate in amount, and too remote in point of time, to provide necessary relief, and that the record justified that belief, and in view of the further fact that the carriers, and the great public and private interests dependent upon their future welfare, otherwise would be subjected to the great risk of such alternative measures proving to be inadequate or ineffective?

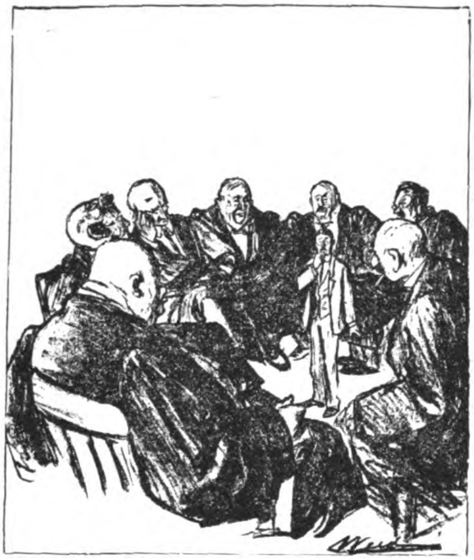
AN ANTAGONISTIC ATTITUDE

It is hard to understand why the Interstate Commerce Commission continues its apparently antagonistic attitude towards the carriers. Such an attitude might have been more readily understood in the past when the railways were more actively combating the Commission's authority. Within recent years, however, there has been evidenced a strong desire to work in harmony with the Commission and to abide by their decisions and rulings in all cases where it did not actually jeopardize the solvency of their properties. The Commission has, at times, recognized



COMMISSION—"Why Should You Expect to Make Expenses?"

—*Philadelphia Ledger.*



Commissioner (to Railroad President)—State your reason for thinking you should be allowed to make a living.
—From *New York Tribune*.

this friendly and co-operative spirit, and has taken occasion to publicly endorse it.

It is only since the actual solvency of their properties have been threatened, that the railways have combined in an effort to increase their revenues sufficiently to permit them to conduct their plants in such a manner as to meet the demands of commerce. Surely there is nothing to object to in such an attitude, nor should the Commission find fault with the efforts being made to rehabilitate the industry.

The attitude and the arguments of such men as Louis Brandeis and Clifford Thorne we can pass over without comment. Their bias is evident, and they have been largely discredited in public opinion. When an Interstate Commerce Commissioner, however, obviously attempts to embarrass a railway executive while making a plea for an increase in freight rates by inquiring if he thought that the railroads should be dealt with in any other manner than other industries affected by war conditions, it is little to be wondered at that the Commission itself is freely accused of a feeling generally antagonistic to the carriers.

It must be fully appreciated by the Commission that the present plight of the railways is only secondarily due to the effect of the war and that other industries, unlike the railways are free to apply such remedies as they may consider necessary to overcome the generally unfavorable conditions. In other words, they can increase prices, reduce operating expenses, and in a hundred other ways, handle their properties in a manner which is not possible for the railways to do under governmental regulation.

On the other hand, the railroads are forced to apply to the Commission for relief. The Commission regulates their rates, in fact has been steadily reducing them for a long series of years while at the same time compelling them to increase their operating expenses until a situation has been reached, irrespective of war, which has caused railway investment to be looked at askance by investors, not only in the United States, but in all other foreign countries. This is the situation the railways desire remedied and the war, so far as the carriers are concerned, can only be called an incident in connection with their generally unfavorable conditions. For an Interstate Commerce Commissioner, therefore, who thoroughly understands the situation, to ask such a question as referred to in our opening paragraph, shows a bias which is assuredly disheartening, when the real responsibility of the Commission for the welfare of our transportation interests, is taken into consideration.

The press of the country has been quick to catch this point of view, and many editorials have been published criticising the Commission for assuming such an attitude. To quote from an editorial which recently appeared in the New York *Tribune*:

> Questions asked at the railroad rate rehearing in Washington indicate that some of the members of the Intertsate Commerce Commission do not grasp the problem with which they are dealing. Their point of view seems still to be that of the railroad baiter in the good old times when railroad baiting was supposed to be a patriotic pasttime.
>
> Why was the case of the Eastern railroads, which had unsuccessfully appealed for a five per cent increase in freight rates, ordered to be reopened? Manifestly it was because the war in Europe had made the Commission's decision of August 1 look preposterous.
>
> A decision like that, which talked peace when there was no peace, could not be expected to give satisfaction. Public opinion was almost unanimous in regarding it as one of the most inopportune official judgments ever delivered.
>
> Yet although the Commission's belated discovery that a great European war had broken out was the only intelligible ground for granting a reargument we find the Commissioners asking questions indicating that the extraordinary depression caused by the war is in their opinion no ground for granting the railroads further relief. According to one account of the hearing on Monday, Commissioner Clements asked Mr. Willard, the president of the Baltimore and Ohio Railroad, "if he thought that the railroads should be dealt with in any other manner than other industries affected by war conditions."

> Such a question is little short of amazing. Other industries are left free by the Government to regulate their own affairs. They may raise their prices as they please without interference from Washington. But the railroads have no free hand. Their earning power is limited for them by the Interstate Commerce Commission's decrees, and they may be made to starve, even in the midst of general plenty, if the Commission thinks it advisable to starve them.
>
> The Interstate Commerce Commission needs to enlarge its vision and deal in the broadest national spirit with the rate question. Starving the railroads is a dead policy.

The Jacksonville, Fla., *Times-Union* takes a similar point of view and asserts that:

> From the grilling administered to the railroad men who appeared at the hearing, it looks as if the Interstate Commerce Commission, as at present constituted, is composed of men more prejudiced than the average of the American people against the railroads. Each witness was rigidly cross-examined, and the railroad men were reminded that the people of the United States as well as the railroads needed relief.
>
> This important fact was lost sight of: The people of the United States fix their own prices for what they offer for sale or for their services. There is no commission that holds to the lowest level short of confiscation the value of their products or of their services. If the railroads enjoyed this privilege that is accorded to all other classes they would not be now complaining.

The Philadelphia *Ledger* calls attention to the enormous power which rests in the hands of the Commission and the necessity for such a body to consider the great questions which come before it in the most broadminded manner. To quote from a recent editorial appearing in this newspaper:

> One-eighth of all the wealth of the United States is in railroads. Congress has seen fit to place this one-eighth of our national possessions in the hands of seven men. No other similar body is endowed with such power over the destinies of twenty billions of capital, two million employes and more than that number of investors.
>
> The attitude of the Interstate Commerce Commission which most amazes the public is its apparent hostility to the railroads. It was created to weigh facts and hear testimony, but not to perform the duties of a prosecuting attorney.
>
> What the public, which must pay the bills of both railroads and shippers, would wish is the Commission sitting as a judicial tribunal to hear cases. It ought to be equally friendly to both sides and antagonistic to neither.
>
> In resenting what bankers and others interested in this vast railroad property are doing to protect it, the Commission displays an attitude wholly unjustified. It is still the privilege of every American to guard what he owns.

Arguing along similar lines, the St. Louis *Globe-Democrat* has the following editorially to say:

> The principal argument used against the granting of the application of the Eastern railways for an increase of rates was an attempted parallel between the railway and ordinary private business. The comparison of railway with ordinary business is not altogether fair. Furthermore, the Government has done everything in its power to aid ordinary business. It has extended the Aldrich-Vreeland currency act and enlarged it to care for the emergency in credit conditions. But ordinary business is not run by the Government as the railways are. They must in all practical matters submit to the judgment of the Interstate Commerce Commission and the various State commissions and to the acts of Congress and the various legislatures. They must submit every schedule to the scrutiny of commissions, who hold hearings on complaints of shippers. Since the Government has seen fit to exercise these large powers, which experience showed to be necessary, it has morally bound itself to do justice to the railways as well as to the public.

THE RELATION BETWEEN RAILROAD PURCHASES AND GENERAL BUSINESS CONDITIONS

Mr. E. P. Leigh, president of the Chicago Railway Equipment Company, has recently had prepared the following interesting diagram showing the relation of railroad purchases and general business conditions. Using the number of freight cars built each year as a unit for railway purchases, the results year after year have been projected on the well known chart of the Brookmire Economic Service for a ten-year period. The chart clearly shows the relation which exists between railway purchases and the trend of general business and as Mr. Leigh points out, confirms the soundness of the doctrine that railway purchases measure general prosperity. To quote from his article:

> It should be noted that up to 1898 these two factors ("railway purchases" and "general business") moved in normal relation; but in 1908 a new condition or factor, appeared, due to the investment of the rate making power in the hands of the Interstate Commerce Commission. Thus, for the first time were railway purchases controlled by abnormal rather than normal conditions, and have so continued, more or less, from 1908 to the present time. The year 1908 was notably the leanest of business years notwithstanding bumper crops, plentiful money and absence of disturbed political conditions, the three recognized elements making for good business. It likewise recorded the smallest number of cars ordered during the period, and the minimum of railway purchases for many years past. In 1912, heavy purchases continued throughout the year, carrying general business to the high peak, at the end of the year.
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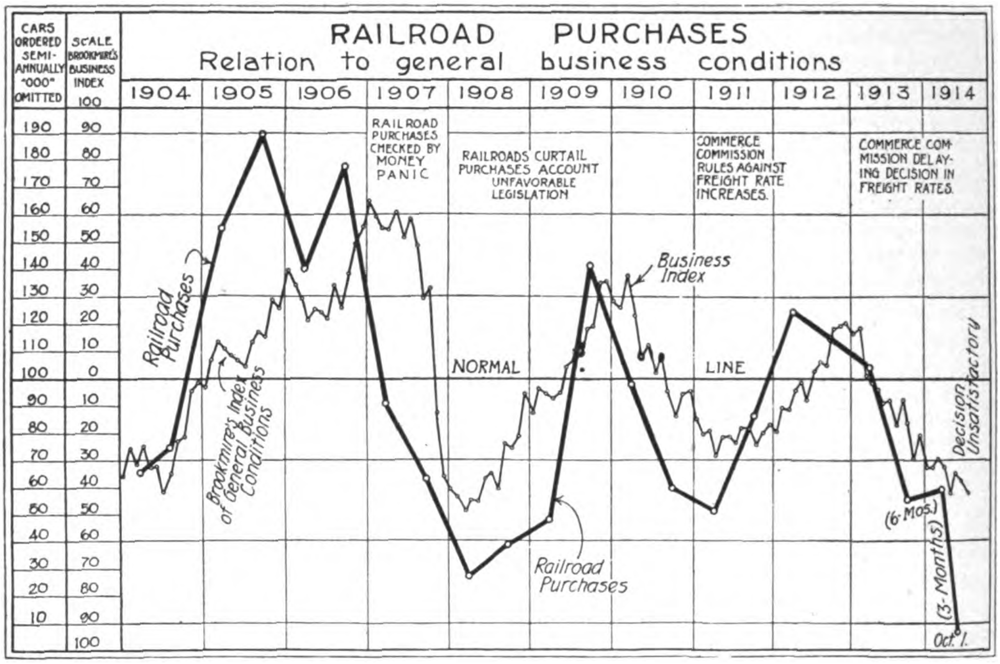
> While general financial conditions are essentially fundamental to all industry and commerce of every character, the railways, consuming di-



rectly or indirectly, between forty and fifty per cent of the production of the steel and iron industry, it is a basic industry clearly indicating the basic factors in initiating a general business method and whose causations of purchases (conversely) retard such a movement. In other words, regardless of favorable money conditions, crop conditions, political conditions, or any of the other fundamental contributing factors to a sound business condition, unless the railways are placed in a position to make purchases, and do not make purchases on a normal scale, normal prosperity is held from general business. It is this great salient feature of the question which the Interstate Commerce Commission is urged to recognize, as it has been recognized by the industrial and commercial world.

Sooner or later, in one way or another, the sound policy of "live and let live" must be invoked and applied to this question, if our railways, our industries, and our commercial enterprises are to enjoy a measure of prosperity. It is directly or indirectly a matter of vital importance to every individual of our Nation.

POLITICAL INFLUENCES AFFECTING RAILWAY OPERATIONS

Attention has been called in past issues of the RAILWAY WORLD to the pernicious effect of unfair political interference with railway operations. The railways have suffered to an unusual extent in this particular, and it is not going too far to state that had not hundreds of wholly unnecessary and ill-advised laws been placed upon the statute books during the past few years, the financial condition of the carriers would not be giving railway officials and investors the grave concern which it does at the present time.

A large number of these laws were purely the result of political expediency and were recognized by many, at the time of their passage, to be directly opposed to by the best interests of the transportation industry. The two-cent passenger laws and the full crew laws, are striking examples of this class of legislation.

The full crew laws are peculiarly offensive in that in no instance have they been justified by actual conditions. Their passage has been caused by the direct influence of the labor vote and has resulted in forcing the railroads in various States to employ a large number of men for whom there was practically no work. This has proved a great detriment to the service and rebounded to the disadvantage of those who had legitimate employment.

More recently there has been a revulsion of feeling with reference to these laws and railway officials are vigorously demanding their repeal in a number of States.

In this particular the election results in Missouri were highly encouraging. In that State the full crew law was voted upon under the recently enacted referendum, with the result that there was 324,085 votes cast against the full crew laws as against 159,593 in its favor. In other words, the measure was defeated by 164,492 votes. To quote from an editorial appearing in the New York *Times* shortly after the election:

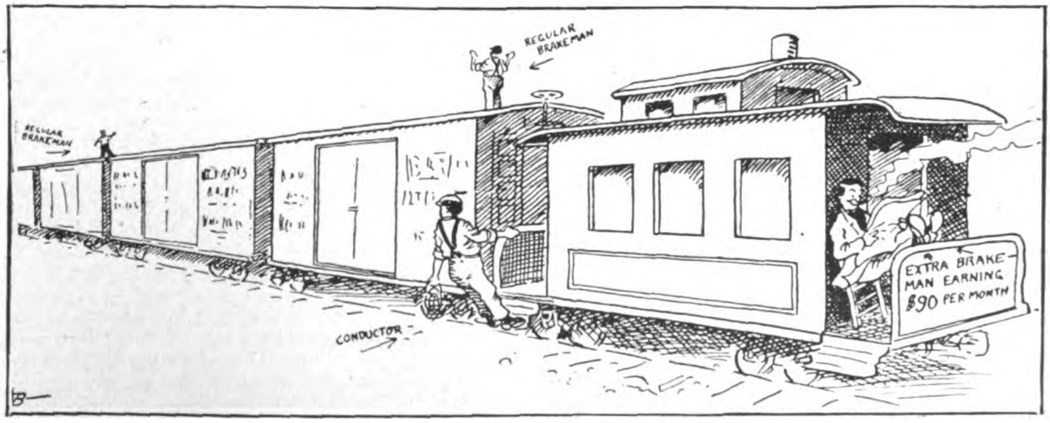
> The Missouri referendum upon the full crew law is the second best thing which could have happened. The first best thing would have been for the voters to have elected the sort of Legislature which neither could nor would pass a law necessitating its veto at the polls. The one thing about the referendum above criticism is that it cannot be misunderstood or misrepresented. The issue presented was so naked and so clear that the vote of three to one in the negative speaks for itself.
>
> The full crew laws have been passed mainly by the activity of the Brotherhood of Railroad Trainmen. The opposition of its membership was so pronounced that it was necessary to pass a resolution forbidding members to sign petitions against labor legislation, and also forbidding them to "interfere with the work of their legislative representatives without violating the law of the brotherhood, which would mean expulsion for the offending party."
>
> That is the way to secure legislation unfit to be passed. It is not the way to get the confidence of the voters, or to give labor legislation a high place in the esteem of non-unionists, who are nine tenths of the people. It is only in such ways that it was possible to enact this law in Massachusetts, for example. It was pressed through ten years of effort, and finally passed over the adverse report of the Railway Commission, and vetoed by Governor Foss. There have been eight full crew laws before Congress, but as yet none has run the gauntlet. The repeal of the full crew laws in the score of States which have passed them would be almost as good as an advance of rates confined to those States. The repeal of all the anti-railway laws in all the States would be better than the advance of rates upon which so much is thought to depend. Yet not one word has come from the Interstate Commerce Commission on the subject. The Commission has an eye solely for the reduction of rates, and thinks not at all of reducing costs. Yet the reduction of costs and the reduction of rates must proceed together. The Supreme Court, for all its dignity, reversed itself in time. Can it be possible that the Commission is less accessible to popular opinion than the Supreme Court?

There are many indications that railway employes are also beginning to appreciate the detrimental influence of these full crew laws upon their own welfare, and are joining the operating officials, in an effort to abolish them. Recent developments show that the influence of the labor vote is, at present, felt heavily in the legislative halls of the country but labor has yet to learn that, though its influence may at times force the enactment of legislation of an unfair and selfish character, the higher economic laws will eventually adjust the balance. Such methods, in the long run, must result in the loss of both prestige and prosperity to those who support them.

THE AMERICAN RAILWAY PROBLEM AS VIEWED BY EUROPEAN EXPERTS

In spite of the war and the pressure of more vital affairs at home, Europe continues to make a close study of American railway conditions and it is apparent that many foreign railway experts consider that the railways of the United States have reached a crisis in their existence under private ownership. Last month we took occasion to quote from the *Zeitung des Vereins Deutscher Eisenbahnverwaltungen,* the official journal of the German Railway Association, regarding the attitude of the Interstate Commerce Commission towards our railways. This same publication has recently published a series of editorials on the American railway situation, from one of which, entitled, "The Present Decline of Railways in the United States," is taken the following quotations:

> That United States railroads are in evil days has been repeatedly pointed out in these pages. Their expenses are on a constant climb, due especially to ever-increasing demands of labor and



EVERYBODY WORKS BUT EXTRA. —From the *Age Gazette.*

advancing cost of materials; yet the companies are allowed only with great restrictions or not at all to protect themselves through higher rates.

From many quarters it is demanded that rate increases, the need for which is admitted, shall not apply to freight. That most of the roads must exist on freight and make little or no profit from their passengers is an open fact. In the United States the operating ratio in passenger traffic has risen decidedly.

For passenger service ever better equipment is provided, still the fares have declined. Average receipts per passenger mile, 2.35 cents in 1888, fell to 1.93 in 1909, since when there has been a slight upturn. During this whole period many improvements have been made. The latest is the steel car, which the public demands, but which costs 40 per cent more than the old style car, and besides, because of its weight, considerably raises operating costs. Electric light, the more expensive toilet and wash facilities, heating and ventilation, all contribute their share to the advance in expenses.

In freight traffic, on the other hand, aside from the growth of fast freight, many economies have been effected—especially noticeable on heavy freight lines. On the Pittsburgh and Lake Erie the trainload rose from 465 tons in 1893 to 1,225 in 1913. The earlier 20-ton car has given way to the 60-ton, a capacity increase of 200 per cent; yet maintenance of the new cars costs only 20 per cent more.

Cost of locomotive maintenance has doubled in twenty years, while wages have increased by half. The increasing weight of locomotives and cars has made necessary stronger bridges, and roadbed, so that capital invested, and consequently interest charges, have expanded. The larger American roads have strikingly low freight rates, but even on the others the average is small.

The number of employes from 1907 to 1913 increased 10.6 per cent, and the wages paid increased 30 per cent; and since this constitutes 63 per cent of operating expenses and 44 per cent of earnings, it is no wonder that the operating ratio, which at the opening of the century stood at 68 per cent, has climbed to 73.5 per cent.

The arbitration boards, appointed to settle disputes between the roads and their employes, especially the trainmen, have encouraged this latter increased expense and it seems a fact that the roads have reached the limit of their ability, if they may not increase their revenue through higher tariffs.

The feeling abroad, so far as it can be gleaned from published statements, is overwhelmingly against the attiude of our regulative authorities, which is found to be unfair and unduly restrictive. We have yet to see a single favorable comment from foreign sources as to the present attitude of our regulative authorities. To most foreign writers, it appears incomprehensible that an enlightened people would permit such authorities to virtually strangle an industry through whose veins flows the life blood of one of the world's most progressive nations.

Perhaps some of these foreign authorities do not appreciate how hard it is, at times, for the people to procure proper representation from those upon whose shoulders they have placed the responsibility of government. The atmosphere at Washington appears to have a peculiar effect upon some public officials and to develop their bump of egotism to such an extent as to cause the loss of their sense of proportion, both as to their own importance and the real requirement of their position.

The whole country is thoroughly familiar with the fact that business men are now practically a unit in their desire to have railway rates increased. It is well within the truth to state that there are hundreds of thousands of business men to-day in all sections of the country, who are hoping daily for a favorable decision from Washington. As a matter of fact there is practically no antagonism worthy of the name to the proposed increase. Yet despite this known sentiment on the part of those who foot the freight bills, the Interstate Commerce Commission delays its decision in a most deplorable manner. The entire nation is back of the railways' appeal, and yet the Commission resorts to inexcusable and deplorable delays, while it hides under the protection of the lofty dignity of its office.

Another recent foreign criticism of American railway affairs comes from the London *Statist*. After discussing the disastrous effects of the country's regulative policies upon various railways, which, it affirms, have been carried to an extent far beyond the interests and demands of the people, the *Statist* asserts editorially that:

> The railways of the United States have had legal restrictions imposed of double-barrelled character. In the one direction there has been a cutting down of rates that companies are permitted to receive for services rendered to the public, and, on the other hand, the necessity to carry out measures for working the railroads, measures that entail extra costs.
>
> Beyond governmental and state regulations for safety of working, &c., the railways have been subjected to constant demands for increased remuneration, modification of hours of work, &c., for employes, and also additions to taxes, &c. It would be tedious to seek to detail the et ceteras.
>
> The application of a remedy is imperative, and the remedy is a readjustment of rates. In a word, it is necessary for the United States to permit the railroad companies to raise rates to an equitable extent. Changed circumstances in the United Kingdom recently necessitated the taking of this step here.

FURTHER EXAMPLES OF THE WASTE OF GOVERNMENT OWNERSHIP

The Bureau of Railway News and Statistics at Chicago has recently prepared a statement, based on official figures, which shows that had the two government railways of France in 1913 equalled her private railways in economy of operation, there would have been a saving to her taxpayers of approximately $17,000,000. It might be added, that where similar comparisons have been available, the experience of government ownership always produces strikingly similar results. Government methods have been, and always will be wasteful, when compared with the more carefully developed methods of private enterprise. The very nature of the effort compels such a result. In government ownership, both individual initiative and competition are destroyed, and nothing yet has been devised which can overcome the effect of the elimination of these influences upon the economic management of business affairs.

To revert to the situation in France, of the 25,265 miles of railway in that country last year 5,611, slightly more than one fifth, was operated by the two government lines, the "Old State" and the Western. How these two lines under the care-free disbursal of public moneys, compared in efficiency with the large private companies is demonstrated by the spending of $83.50 out of every $100 receipts to run the Old State, and of $86 out of every $100 revenue to run the Western. In sharp contrast the Northern operated only $61.30 out of every $100 receipts, the Eastern on $61.60, the Orleans on $59, the Paris-Lyons-Mediterranean on $57, and the Southern on $55.50, an average for all the private companies of $59.50 against an average for the two State lines of $85.

Receipts and expenses of the two State lines compare as follows with the total of private railroads:

	Receipts.	Expenses.	Ratio.
Old State	$15,000,000	$12,500,000	83.5%
Western	50,500,000	43,300,000	86.0%
Private Rys.	346,000,000	206,000,000	59.5%

A ratio such as that attained by the private companies, if applied to the Old State, would have meant a saving of $3,600,000, and if applied to the Western, a saving of $13,382,500; a reduction of operating expenses in each case of practically 30 per cent, and a total saving of some $17,000,000.

On the other hand, had the private companies operated as wastefully as the government lines, the loss would represent over $88,000,000, and operating expenses would have been $294,000,000 instead of $206,000,000.

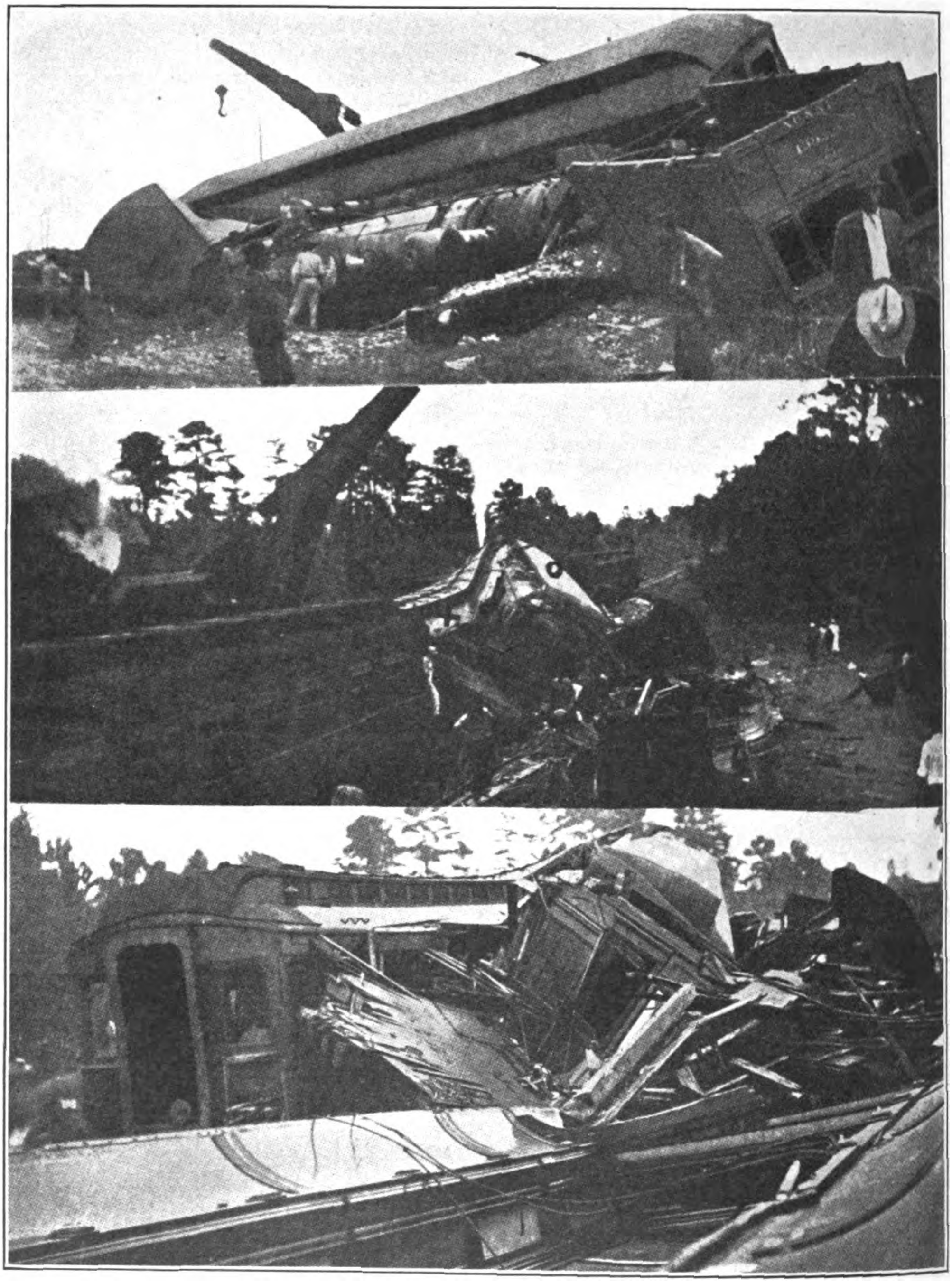
Even this enormous total of $85 in expenses to every $100 revenue on the two State lines in 1913, moreover, represented an improvement, for in 1912 the figure was $89. Aided by a bumper apple harvest in Bretagne and Normandy, in which the State roads were the chief beneficiaries, Colson says that "after the profligacy of expenditures in preceding years the State made a serious effort to arrest their growth, effecting notably elimination of trains on lines of light traffic, compensating for these on which traffic expanded. The operating ratio of the two lines thus fell from 89 per cent to 85 per cent, a figure still excessive enough for roads enjoying $11,383 in receipts per mile, especially when one adds the large additions to capital for maintenance."

Against a net of $9,700,000 left after payment of expenses, the State had to meet fixed charges amounting to some $26,000,000, resulting in a deficit of $16,000,000 to the treasury for the year.

In spite of the notably poor showing of the government lines compared with the private, they enjoyed higher rates on the greater part of their traffic. As on most of the State systems passenger rates, representing a direct charge on the public were lower, averaging on the Old State 0.92 cents per mile and on the Western 1.00 cent per mile, against 1.08 cents for all railways. Freight rates, on the other hand, not so directly paid by the public averaged 1.60 cents per ton mile on the Old State, and 1.62 cents per ton mile on the Western, against 1.31 cents for all railways. Even this lower average is almost double the average received by United States railways, 0.73 cent per ton mile in 1913.

THE SAFETY OF THE STEEL CAR

Railway accidents which have occurred during the past year have convincingly demonstrated the safety of the steel car as compared with cars of wooden construction. This comparison has seldom been more strikingly illustrated than in an accident which occurred on September 18th on the Alabama Great Southern Railroad near Livingston, Ala. The accident was caused by an unknown criminally inclined person who opened a spur switch



Upper View Shows Derailed Locomotive and Roof of Combination Baggage and Express Car. Middle View Shows Wreckage of the two Coaches and the Combination Baggage and Express Car, While Lower Photograph is General View of Wreckage, Looking North.

just before a passenger train en route from New Orleans to Cincinnati, reached it. This train consisted of one steel underframe mail car, one steel underframe express and baggage car, one wooden coach, one steel underframe coach, one all-steel Pullman sleeping car, one wooden Pullman sleeping car, one all-steel Pullman sleeping car and three wooden Pullman sleeping cars, in the order given. At the time of the accident, this train was running at about fifty miles per hour, and, on account of the tampering with the switch, the engine collided with a car of slag and railroad ties at the end of the spur, the car of slag being driven beyond the mound. The accident resulted in the death of eight passengers, one employe and one mail clerk and the injury of twenty-eight passengers, three employes, five mail clerks and four Pullman porters. The accompanying illustrations give an idea of the general appearance of the cars shortly after the wreck occurred.

The Interstate Commerce Commission, through its safety division, has issued a report on this derailment and entirely exonerates the railroad from any blame, placing it upon the shoulders of the unknown person who criminally opened the spur switch at a time when the train was too close to permit the engineer to stop, although all possible efforts were made, including the application of the brakes, the reversal of the engine and the opening of the sanders.

From a technical point of view, the chief interest in the accident lies in the fact that all classes of passenger equipment were represented, that is, the steel car, the steel underframe car and the wooden car. The greatest damage was sustained by the first four cars of the train which, as before mentioned, consisted of one steel underframe mail car, one steel underframe express and baggage car, one wooden coach and one steel underframe coach. The third car, a wooden coach, was practically destroyed, while the second and fourth cars, constructed with steel underframes, were very badly damaged, the first car also with a steel underframe, was not damaged as much as the others, probably on account of having been thrown on one side. In the wooden coach there were either six or seven passengers, three of whom were killed and the others injured. In the steel underframe coach, there were fifteen passengers, five of whom were killed, while all but one of the others were injured.

H. N. Belknap, chief of the Division of Safety of the Interstate Commerce Commission, in commenting on the relative safety of these cars as indicated by the accident, made, in his report, the following statement:

> While none of the steel underframe cars was entirely destroyed, as was the wooden coach, nevertheless it appears questionable, when comparing the damage sustained by the different types of cars in this train, whether the steel underframe type of car afforded a materially greater degree of safety to passengers than the wooden coach. Steel underframes will probably prevent the buckling or breaking in two of a car, and in that respect cars so constructed are undoubtedly an improvement as compared with cars built entirely of wood; if practically every thing above the steel underframe is to be destroyed in an accident, however, it is apparent that but little increased protection to passengers is afforded. The fifth car in the train, an all-steel Pullman sleeping car, was practically uninjured, all the damage sustained by it being confined to the trucks and running gear. In this accident the performance of cars of different types very strongly supports the view that the greatest degree of protection to passengers can be afforded only by all-steel cars.

PRACTICAL RESULTS OF THE SAFETY FIRST MOVEMENT

Attention has been called before in these columns to the dollars and cents application of the safety first movement as well as its direct bearing upon the conservation of human life. Not only are there saved to the railways, annually, many hundreds of railway employes, but the great reduction in personal damage claims as well as the greater protection offered to equipment, makes the safety movement well worth while from a purely financial point of view. This is strikingly brought out in a statement recently issued by the Southern Pacific Company. That the safety first activities of this company are not confined to passenger traffic alone or to the safeguarding of employes, is shown in the fact that a record has been established for the prevention of loss and damage to freight, in spite of the fact that approximately thirty per cent of its freight traffic is perishable and thirty-four per cent merchandise and products of manufacture.

The above is brought out in comparative figures showing the ratio of loss and damage claims to freight revenue for the important trunk lines of the country. These figures show that there is but one road with a lower percentage than the Southern Pacific, and that is an Eastern road whose principal freight traffic is in coal.

A glimpse at the figures showing the standing of the roads in this connection shows that most of the railroads are constantly striving to reduce the percentage. The old days when the consignees approached their shipments with trepidation, expecting to find their goods battered around, are past and gone. To-day the railroads are doing their utmost to place shipments in the hands of the consignee just as they are turned over to them by the consignor. To be successful in this, they have to enlist the active co-operation of stationmen, trainmen and all division officers.

The Southern Pacific's low percentage is

89-100 of one per cent. This it has maintained for two years. Vice-President and General Manager W. R. Scott, of the Southern Pacific, has issued a circular letter congratulating the train and stationmen on their careful work and interest, and the division officials on their active supervision.

THE PUBLIC'S INTEREST IN THE SAFETY MOVEMENT

Much has been written within the past year or two with reference to the marvelous results which have been obtained by public service corporations and large manufacturing plants in the adoption of a greater safety propaganda by which, through the installation of safety devices and the education of the employe along safety lines, a great decrease both in injury and death has been accomplished.

As railway officials fully appreciate, the conservation of human life through the safety movement has proved so effective and so remarkable as to cause it to be adopted by practically every railroad system of any importance in the United States. In addition, the habits of carefulness, which the movement tends to develop in the average employe, have led to a more considerate and careful handling of the companies' property and have thereby saved large sums of money annually by a greater protection of all classes of equipment. From a financial point of view, the movement has proved eminently successful, paying enormous dividends on all moneys expended in its promotion.

A phase of the greater safety movement which has not, however, received much attention, relates to its adoption by the general public. It was not until railway safety statistics began to be generally compiled and classified that the fact became known that a great proportion of so-called railway accidents were due to no fault of railway management or operation. For example, it has been found that a large proportion of accidents to railway employes is entirely the result of the carelessness of the individual; and while this is being corrected as rapidly as possible by educating the employe along safety lines, there still remains the general public, many thousands of whom are either annually injured or killed by so-called railway accidents, but for which, as with the railway employe, the individual is entirely responsible. Thus thousands of trespassers are maimed or killed annually while hundreds, if not thousands, of passengers are similarly injured by their careless disregard of general safety conditions in their methods of getting on and off trains, conducting themselves in railway stations or improperly employing railway crossings.

This general question of educating the public along greater safety lines was recently interestingly discussed by Mr. Martin J. Insull before the Annual Congress of the National Council for Industrial Safety, held in Chicago on October 13th. Mr. Insull believes that while the public may at first object to an effort on the part of public service corporations to educate them along the lines of greater safety, such a movement must eventually cause the establishment of closer and more friendly relations. He points to the fact that other service corporations, aside from the railroads, annually report the injury or death of hundreds of individuals for which such corporations were in no wise responsible. Referring to the electric lighting industry, of which there is scarcely a more hazardous business, he asserted that less than ten per cent of the accidents resultant therefrom, were really chargeable to the hazards of the business and most of them could have been avoided by ordinary care and thought. In closing his address Mr. Insull said:

> I feel I have good reason to make the pleas for accident prevention along general lines because until this is accomplished how can the public service corporations, or the industries, expect accident prevention along special lines? While we, in our particular lines of industry, are endeavoring to educate the public in the prevention of accidents incident to that industry, we must assist in every way we can in their education along the more general lines of accident prevention. The public service corporations can, through their necessary closer contact with the public, do a great deal in this campaign of education. It will undoubtedly take the public some time to appreciate that the work is being carried on for their benefit. When they do, however, we shall, I am sure, find them ready and willing to assist in any way they can and working together the public and the public service corporations in a safety movement for the common good, must result in a closer and, if possible, a more friendly relationship than even exists to-day.

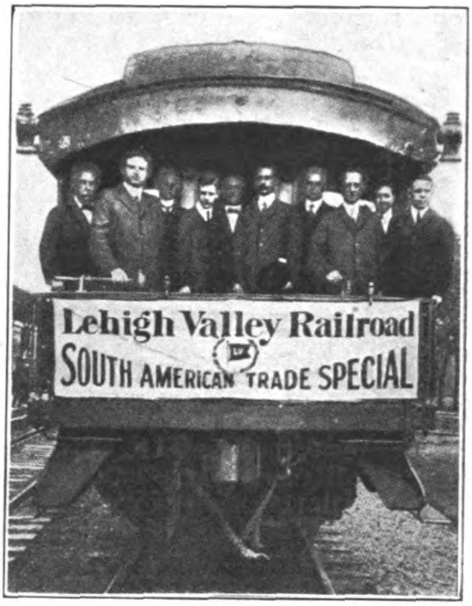
"MADE IN AMERICA" CAMPAIGN

Strenuous efforts are being made these days to push American trade into those quarters which have, until recently, been largely cared for through European effort. At the same time steps are being taken to stimulate a greater demand in our own country for American-made goods which, in the past, have been supplied, to some extent at least, through foreign sources. For example, a Louisiana company is preparing to revive two industries at once by selling Louisiana sugar, packed in cotton bags, direct to the consumer. As another example, Paterson, N. J., has recently been calling attention to the fact that it is the world's greatest silk manufacturing city. In fact the American business man is, as usual, rising to the occasion and making a mighty effort to offset the restrictive influences of the European war, both in the home markets and in the markets abroad.

Perhaps the interest in the South American trade has been the most general of all, as the possibilities of its enlargement have become more fully realized. These countries, which have been big buyers of European merchandise, have now found this source of supply practically cut off, and while there are still many difficulties in the way of this trade being fully absorbed by the United States, the opportunity is unquestionably there, and no one who fully appreciates the energy and enterprise of the American business man, doubts that the ways and means will not eventually be found.

The accompanying illustration is offered as an example of how the railways are making an effort to stimulate the general interest of trade possibilities with our great southern neighbors. The Lehigh Valley's effort by no means stands alone in this particular, as railways in all sections of the country are paying more or less attention to the development of this trade. It is of interest to note, however, that in connection with the Lehigh Valley's effort, twelve large manufacturing concerns on this railroad's lines have thus been led to make a start in pushing their goods in South America.

This is only a slight indication of the tremendously important part played by railways in industrial and commercial developments, but it is enough to indicate the danger of restrictive public policies upon activities of this kind. The railways are great up-builders of national prosperity, and to restrict their efforts or unfairly burden them, is to place a similar load upon the back of every industry of the country. Sooner or later the public will come to more fully realize this fact, and when it does the politician and the public regulator will find that railway baiting and the restriction of railway enterprise, is no longer a healthful pursuit.



EFFORT OF LEHIGH VALLEY TO INCREASE INTEREST IN SOUTH AMERICAN TRADE, WHICH HAS PROVED HIGHLY SUCCESSFUL.

Commercial interests as well as the railways are giving increased attention to the possibilities of the South American trade and as an indication of the progress being made, it is of interest to note the following meetings which have taken place recently for this specific purpose:

The Trade Conference at Atlanta, Georgia, called for the purpose of discussing the possibilities of developing the field for South American manufacturers; the luncheon of the Merchants' Association in New York at which over 1,100 business men were present, the subject under discussion being the trade opportunities in South America; a meeting of the Jacksonville (Fla.) Board of Trade for discussion of similar subjects; the meeting of the Business Men's League in St. Louis and luncheon, with South America as the general subject of discussion; the annual dinner of the American Exporters' Association in New York, at which two of the speeches were devoted to South American opportunities; the Machine Tool Builders' Convention, held in New York, at which part of the afternoon was given over to South America; the convention of the American Hardware Association in Atlantic City, with a half day devoted to South America; the convention of the New England Jewelers' Association at Providence, R. I., with the annual meeting partly devoted to South America, and a conference called by Governor David I. Walsh and the State Board of Labor and Industries of Massachusetts for the study of foreign trade development.

The Chicago Association of Commerce has been active during the month in formulating plans in extending the work and scope of the exhibit which it has maintained at Buenos Aires for a number of years. The manufacturers of Bridgeport, Conn., have also been studying the field critically.

Besides the formal meetings above mentioned there have come to our attention the news of the organization of numerous export committees of chambers of commerce, and the formation of export clubs and divisions. There is practically no association of commerce in any of the large cities in the United States, that has failed to take up a serious study of the possibilities of trade extension in South America.

THE QUESTION OF PUBLIC RELATIONS

The question of public relations between the Baltimore and Ohio Railroad and the communities served by its lines is one of absorbing interest to the management, as indicated by a circular which has been sent to all officials, agents and other representatives of the road, urging them to exert every effort to promote good will by bringing about a fair understanding of the railroad problems while at the same time according due consideration to public rights.

Representatives of the railroad have been instructed to keep in touch with matters of state and municipal government, as well as with the activities of business organizations, so that where railroad questions are involved the company may secure a hearing when propitious for it to do so. The sense of the circular is that the local representatives of the Baltimore and Ohio shall act in a representative capacity for the management.

At meetings of town councils, trade organizations or citizens the railroad representatives are urged to enter their appearance and give consideration to the questions which come up. In this way the management aims to put itself in intimate touch with public opinion in order to work along co-operative lines with the communities upon whom it depends for revenue.

Agents and others are urged to keep themselves informed through the medium of the local press and forward such articles as may be of interest to superiors. The purpose of the Baltimore and Ohio policy is to extend the plan adopted recently of tendering to the various communities the expert services of its engineering, transportation, traffic, industrial and other officials free of charge in working out their problems. Officials of the Baltimore and Ohio are called into consultation often on problems concerning water works improvements, street construction, erection of buildings, etc., the aim being to give the communities the benefit of every possible assistance.

The present policy of railroad management which has as its foundation co-operation between transportation interests and the people they serve suggested the circular which is being sent to Baltimore and Ohio representatives.

GEORGIA COMMISSION TO HELP RAILROADS

The Railroad Commission of the State of Georgia, realizing the serious financial predicament in which the railroads are at present, has decided to come to the rescue of the transportation interests to tide them over their dilemma. The chairman of the Commission in a letter to the general counsel of the Southern Railway states that owing to the material decrease in the revenues of carriers the Georgia Railroad Commission will not now nor until the present financial situation is relieved impose upon any of the roads subject to its jurisdiction any expenditures for new stations, warehouses, terminal facilities, etc., except such as are absolutely necessary. If the Railroad Commissions of other States follow the example of the Georgia Commission it will aid greatly in saving the roads from the financial ruin which is now staring them in the face. Matters look particularly blue for the various Southwestern lines which have been greatly hampered by expensive and unreasonable legislation and rulings of various kinds.

Contemporary Opinion

National Prosperity versus Railway Rates.

(From *The Kernel,* New York.)

WHAT is the answer of the Interstate Commerce Commission to the renewed appeal of the Eastern railroads for privilege of making a general increase in rates? This question is probably uppermost in the minds of the people from one end of the nation to the other. The war and its effects have in three months advanced the financial education of the people probably more than it would have progressed in a decade under normal conditions. The people now realize and recognize the need for and legitimate uses of stock exchanges and commodity exchanges as they never have before. In like degree the public appreciation of demagogues who seek by attacks on business to develop political capital among the ignorant has lessened. Has the business view of the Interstate Commerce Commission as a body been broadened by the predicament into which business has been thrown by the effects of the European war?

In a decision of the Eastern rate case on July 29, the Commission found "that the net operating income of the carriers in Official Classification territory, considered as a whole, is smaller than demanded in the public interest, but that no showing had been made warranting a general increase in trunk line rates, in rail-and-lake rates, or in rates on traffic moving between the different rate territories"; it granted five per cent increase in class and commodity rates within the territory of the Central Freight Association; it suggested to all carriers involved methods by which net income might be increased without a general rate increase. Explaining its failure to grant the increase in rates asked, though it found the railroad income to be inadequate, the Commission said that the law "casts upon the carriers the burden of proof, requiring them affirmatively to show the reasonableness of increased rates" and that "the law did not confer upon us the power of aiding general prosperity or of introducing new economic policies through railroad rates." These things are true, but it is also true that the Interstate Commerce Commission possesses absolutely arbitrary power to accept an unsound and foolish argument against rate increase and to reject a logical argument in favor of it. The Commission, if it is absolutely wrong in its decision, does not even have to apologize for its error. One of the first principles of law is that laws must be reasonably construed. Framers of the law did not specifically charge the Interstate Commerce Commission with promotion of general prosperity, but every citizen of the United States, man, woman or child, every public offical, executive, legislative or judiciary, is by all rules of common sense morally obligated to do that which lies within his power to aid and preserve the prosperity of this country. The Interstate Commerce Commission has found the income of the Eastern railroads to be smaller than the public interest demands. Being the only authority to which the railroads can appeal for higher compensation, why should it not grant such rates as the public interest demands?

As to "methods by which the railroads may increase their net income other than by a general rate increase" suggested in the decision of July 29, the railroads proceeded with all possible dispatch, doing all that brains and flesh and blood, pen and ink and printing presses could do, to take advantage of them. One large system added 30 new clerks and working nights and Sundays required over 30 days to revise and reprint its tariffs. It was found that owing to the Supreme Court decision in the "tap line" case many of the Interstate Commerce Commission's suggestions with reference to increasing revenues by charging for what it conceived to be free service wrongfully granted could not be carried out and other constituted authorities such as State laws so conflicted as to prevent railroads from getting the benefits suggested. At the very outside, it appears, considerably less than one fifth of the relief originally prayed for, and in some instances not more than one tenth of such relief, can be got by the trunk lines from following the suggestions of the Commission.

The Railroads Appeal to the People.

(From the Philadelphia *Bulletin.*)

IN the varied category of legislation submitted to the voters of the different States for approval, Tuesday, no result is more interesting or suggestive than that which attended the voting of the State of Missouri on the "full crew law." Only one city in the State favored the measure and the country districts were convincingly against it. Although the measure had been passed by the Legislature and signed by the Governor, the appeal of the railroads to the people resulted in a popular vote for fair play and the rejection of the law.

The measure was a real issue in the campaign and the battle was well fought on either side. It was the first time that the railroad situation and the protest of the railroad corporations against overtaxing, unjust rate-restraint, crippling legislation, which has forced them to curtail expenditure, cut down wage-rolls, reduce their patronage of allied industries, had been submitted to a popular vote. The appeal had been made to legislatures and notably in Texas there had been in the past year a let-up in the attack. But in Missouri the case was carried directly to the people, and the so-called "popular," "labor," measure proved unpopular.

This Missouri voting is a pointer. Railroad-baiting has been as popular in Missouri as elsewhere. It, very likely, would be found to be as unpopular elsewhere as in Missouri, to-day, were the question to be submitted to the people in this manner. Normally the American people want fair play. They are apt to be carried too far in their crusades, but always swing back to justice. The movement for the restraint and regulation of railroads was justified, but in the enthusiasm—if not actual passion—the attack went too far and became injustice. A necessary public service has been crippled, the public suffers, and is coming to a realization of its duty, even to a railroad.

A Significant Act.

(From the New York *Evening Post.*)

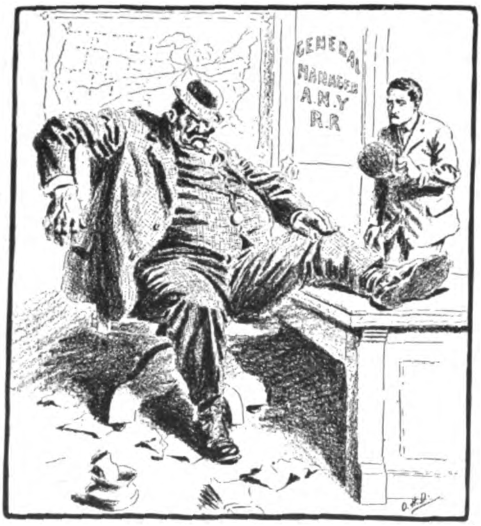
FOR the first time, a "full-crew" railway law was on Tuesday submitted to popular vote and was overwhelmingly defeated. This occurred in Missouri, where a bill had been passed by the Legislature and signed by the Governor, but was referred to the voters. They rejected it decisively. The result is significant in more ways than one. It is a pretty good index, in the first place, of the general feeling that the railroads have had about as many hard knocks as they can stand, and that it is for the good of the country that they should be given a chance to recuperate. Even more striking is the demonstration that the demand for full-crew laws—meaning the employment of more men than are needed to handle the trains—has rested solely upon a narrow labor union basis. Because the employes were organized and exigent, they have been able to terrorize legislatures and frighten governors and befool politicians. The pretense was that there was an immense popular backing for the movement. But at the first real test in Missouri, this was shown to be hollow. Railroad managers are warranted in hailing the event as most suggestive. It ought to help on the work for the repeal of full-crew laws in the States where they have been rashly enacted. All such legislative devices to "make work" are repugnant to sound ideas of efficiency and economy.

Government Ownership—The Master.

(From the *Railway Employes' Journal,* the official organ of the Brotherhood of all Railway Employes.)

THIS is a grim, ugly picture. It had to be that way—the subject is grim and ugly.

But it's a true picture. Look at it, study it, engrave it deep on your mind, for it shows exactly what is coming to you under government ownership of railroads.



The figure in the general manager's chair is your boss-to-be, the Rail-Master. The other figure is you, brother railroad man—you, service stripes on your sleeve, cap in hand; you, shabby, anxious, fearful, shaky in the knees; you, humbly and not very hopefully begging a chance to go on earning a living for yourself and your family.

The artist has made the Rail-Master bulky, paunchy, thick in the neck and little in the head—has given him bulging muscles, swollen veins and a brutal, ruthless, cruel face to match what is in his soul. As the picture shows him you will know him.

It is the brutal, arrogant spirit of politics made brutal, arrogant flesh that the picture reveals.

The public may see the Rail-Master a sleek, courteous individual, tastefully attired, ready-tongued and affable. But you, living your railroad life under government ownership, will see him as he sprawls in his chair in the picture. And the way he looks to you here is the way he will be to you then.

Look again. Do you see in the picture any railway brotherhood emblem in your buttonhole?

No—and when government ownership comes and the Rail-Master is in, you won't dare to have any brotherhood or union card in your pockets. There will not be any railroad brotherhoods or unions then.

When you go in to see the Rail-Master about your hours, your wages, your discipline, your job, you'll go alone. No salaried chairman with you to plead your case; no organization behind you to back up your petition or protest. Just you alone—you, shabby, anxious, humble, and the Rail-Master big in the neck and little in the head and heart.

A lot the Rail-Master will know about railroading—and a lot he will care! A lot he will know about your work, your needs or you—and a lot he will care!

Yes, a lot the Rail-Master will know or care about railroading, about you, or about anything except keeping his gigantic power and enormous profit.

With the government owning the railroads there will be no competition for the business. With himself owning the government—or being the government—there will be no competition and no control for him. He won't have to care about the public—he won't have to care about you.

Look at the picture again. One figure the Rail-Master, the other the Rail-Servant; one the Rail-Czar, the other the Rail-Serf. You the servant—you the serf!

You could oust the Rail-Master with your votes and put a just and competent railroad man in his place? Yes, you could—not. You might change the party in power, but the Rail-Master—the brutal spirit of politics made brutal flesh—would remain the same.

You could appeal to the President and have him right the railroad wrongs and your wrongs? Yes, you could—not.

Many lean weeks ago the heads of a number of great railroads—clean railroads—went to Washington and saw President Wilson. They showed him the desperate conditions of your industry and of you. They frankly asked his aid.

The President was convinced. He called on the country to relieve the railroads—publicly asked men of all conditions, in and out of public life, to see that justice was done to what he termed "the one common interest of our whole industrial life."

Fine!—but what kind of justice has been done?

None at all. The Interstate Commerce Commission reluctantly reopened the rate case. Hour by hour the plight of the railroad industry gets worse. The Commission does nothing—only quibbles and haggles.

The President said: "We must all stand to see justice done and all fair assistance rendered and rendered ungrudgingly."

But how is "the one common interest" treated before the very tribunal which the President appoints? Read how in any of the papers—like a burglar before a police court.

Clifford Thorne, the professional railroad-jammer, is there, windily and abusively baiting the railroads and denying their right to any relief. "Million-Dollar" Brandeis is there officially and for hire, harrying the railroads like a prosecutor. Members of the Commission ask the railroads questions that plainly show either gross lack of knowledge or deep anti-railroad prejudice—either ignorance or insult.

That's how much the President is able to do for your great industry against the spirit of politics not yet wholly in power over it. How much would he be able to do for you—single-handed, unorganized you—against the spirit of politics in absolute power, made flesh by and under government ownership?

Why, neither you nor anybody you sent could get by the secret service men, the flunkeys, the understrappers at the outer door of the President's office. The Rail-Master's creatures would turn you back.

And if you could see the President, what then? A President can't do much, it seems, for all the railroads with the commissioners who get their jobs from Presidents. What could he do for you—single-handed, unorganized you—with the Rail-Master from whom, under government ownership, presidents will get their jobs?

Under government ownership railroad men will have easy hours, steady jobs and good pay? Yes, they will—not.

Ask the army of half-shabby, wholly-sad governmental clerks over in Washington about the hours and the pay. Ask them what the government does for them when they get too old or too sick to work.

Ask the postman that brings your letters how easy his hours are, how light the work and how good the pay. Ask him what happens when he or the postoffice clerk tries to organize for better working conditions. Being under government ownership, the postman may not dare to tell you all he knows.

Ask any railway mail clerk running on your road what kind of an easy-hour, good-pay job he holds. Ask him if his fellows have a union and what happens to its officers if they dare to offer petition or protest. He, too, is under government ownership, but maybe, if you convince him you are not a department spotter he will tell you the truth—confidentially.

Remember, too, that the power of the postal over-lords is only a fraction of the power the Rail-Master will have over you.

Under government ownership the Rail-Master will have good jobs to give—but not to you, brother railroad man. The measure of a man's rank and pay will be political service, not railroad service. The man who regularly delivers a hundred votes can be or name a section boss. Whoever controls a ward or a township can be or name trainmaster or yardmaster. County bosses can be or choose superintendents. The State boss will say who shall be general manager—Rail-Master, master of you.

All over your country would-be Rail-Masters are crowding your industry to the wall, baiting it, jamming it, driving it into either destruction or government ownership. They know that when the government owns the railroads they will own the government—will make the industry that is now the nation's mighty servant the nation's almighty master—and yours.

And when government ownership comes in, it will come to stay forever. There will be no escape. The Rail-Master will never let go.

Look at the picture again—the grim, ugly, true picture of Rail-Master and Rail-Servant, that shows what is coming to you under government ownership—look, and know that government ownership is coming unless you stop it!

What Ails the Country?

MR. PAUL D. WRIGHT, president of the Reed Manufacturing Company of Erie, Pa., was one of the speakers at a dinner recently given in Erie, Pa., to a number of Pennsylvania Railroad representatives. He said in part:

"Cussing is the easiest stuff in the world to write and orate. Manufacturers and business men generally have not escaped, but I submit that the railroads have had more than their share. If the general public is to be prosperous, it must support the constructive elements, and the railroads are one of the greatest, if not the greatest, which we have.

"Intercommunication and exchange of ideas are the biggest single influences in the progress and advance of any civilization. The railroads are, therefore, the biggest single influence in this direction, and they should be freed from unjustifiable and unwarranted attacks.

"Secretary Redfield, of the Department of Commerce, has recently asked Congress for an appropriation of four hundred thousand dollars to find out what is the matter with this country.

"The only thing that ails this country is paralysis—paralysis of the pay envelope. The cause of the paralysis is the continued irritation of business and business men by the Government. Better let him spend four hundred dollars and ask 1,000 employers of labor what is the matter with this country, and the answer will come back, 'The hostile attitude of the Government toward the men who maintain pay rolls.'

"When you attack men who maintain pay rolls, you attack the wage earner, beat his wife and kick his children.

"To kill the courage and ambition of a business builder is to destroy, to an extent, a pay roll, and the destruction of a pay roll is a blow at employers, employes, storekeepers, manufacturers, and, as a result, women and children go hungry.

"Business must be allowed to expand along natural lines. Supervision is necessary, but it must be supervision by sympathetic able economists, by practical humanitarians, and not by hysteric experimenters, professional reformers or party politicians. Physically there is nothing the matter with this country. We have every element for prosperity save trust and confidence. And these the Government must give us, or there will be many new faces in the bread line. To picture all the railroads and all business men as greedy, grasping grafters is unfair. Business men who succeed nowadays tell the truth, keep their agreements and believe in the square deal.

"To tear down in a night a business structure which has taken years of patience and ability to erect is easy. To create, build, transport, distribute—these things only come about through able and patient leadership—not through political palaver, and I ask you, Is it wise to suppress our men who possess commercial genius and who maintain pay rolls?"

Railroads Fail to Share in South's Prosperity.

(From the *Southern News Bulletin.*)

AN interesting fact brought out by the reports to the Interstate Commerce Commission is that the railroads of the South did not share in full measure in the prosperity of the section. While their gross operating revenues increased at the rate of $215 per mile, the increase in operating expenses and taxes was so great as not only to absorb the total increase in gross operating revenues but to make an actual reduction in operating income of $85 per mile, or 3.2 per cent.

Reports of the railroads of the United States to the Interstate Commerce Commission for the year ended June 30, 1914, throw an interesting light on the development of the South during the year as compared with other parts of the country.

One of the best measures of the progress of a community is afforded by the gross operating revenues of its railroads. Measured by this standard, it will be seen that the South is the only section of the country that did a larger business during the fiscal year than in the last preceding twelve months.

In the Eastern district, north of the Ohio and Potomac rivers and east of a line running from Chicago to St. Louis, thence down the Mississippi to the mouth of the Ohio, gross operating revenues for the year show a decrease of $960 per mile, or 4.1 per cent. In the Western district, embracing all of the country west of the Chicago-St. Louis line and west of the Mississippi River there was a decrease of $440 per mile, or 4.3 per cent. In the Southern district, embracing the territory south of the Ohio and Potomac rivers and east of the Mississippi River, there was an increase of $215 per mile, or 2 per cent.

Getting Results by Co-operation.

(From the Bulletin of the Southern Pacific Company.)

SO much is said about co-operation nowadays that by some the subject is approached with hesitation. But, nevertheless, the big vital fact that by close co-operation results are more quickly obtained cannot be overlooked, forgotten or minimized. To say that by working together we can do more work and better may be the utterance of an unforgivable platitude, but it is one, the truth of which cannot be ignored. Experience emphasizes this at some time or other in the ordinary course of every man's life.

In the organization of a great corporation, such as the Southern Pacific Company, there is an unlimited field for harmonious work between all departments. Service, the good will of everybody—shipper, traveler and employe—and revenue are the three things for which the company strives, and it is up to every one of the company's great family of forty-five thousand men and women to help obtain and retain them. The organization is divided into departments to facilitate the great amount of work performed and the service given daily by the company, and the quality of both work and service depends upon the quality of co-operation manifested.

Just now, when the European war situation has seriously disturbed the financial arrangements of every country, it is especially desirable that the men of the Southern Pacific do everything possible to secure additional business for the company. Additional business means additional revenue, and over forty cents goes out of every dollar the company takes in goes out to the men in the form of wages. So, if only for personal reasons, employes should work to secure greater revenue for the company. As travel increases, as freight shipments increase, so does the necessity for more men to handle this additional business increase.

As President Sproule said upon his return from New York a few days ago, "This is the time for us all to hold together for our mutual prosperity, for we all prosper together or we do not prosper at all." Why not all prosper together?

More "Safety First" Mile Stones.

(From the Bulletin of the American Museum of Safety.)

IN recent numbers of *Safety*, attention has been called to early orders or notices of various large industrial enterprises, having for their aim the prevention of accidents, and ante-dating the popular "Safety First" movement which is now sweeping like wildfire over the country. The last one published in the Museum's Bulletin was an order of the Central Pacific Railroad, dated 1869.

The Museum has lately been informed that a book of "Rules for Conductors," published in 1856, and containing specific instructions for accident prevention, has been unearthed by the Lehigh Valley Railroad Company. Rule 33 reads as follows: "In case of danger or doubt, always take the safe side, and bear in mind that *Safety* is the first consideration."

To the founders of the Republic, however, due credit must be given for an early consideration of safety as a matter of prime importance to citizens of the commonwealth. So we find the Honorable John Jay, first Chief Justice of the United States Supreme Court, writing in the *Federalist*, under date of Number 3, 1787, "Among the many objects to which a wise and free people find it necessary to direct their attention, that of providing for their *safety* seems to be the *first*."

A New Business Era.

(From the Chicago Traffic Club Bulletin.)

"PRESIDENT HADLEY, of Yale, as a New Haven director furnished the precedent, and now there is President Alderman, of the University of Virginia, on the board of the Southern Railway and President Pritchett, of the Carnegie Foundation on the board of the Atchison. A new field is being opened to college presidents."

The above from the Springfield *Republican* is interesting, and if the idea is carried to its legitimate conclusion (reductio ad absurdum) we will eventually reach a state of affairs decidedly novel and admirable in the original meaning of the word. We may, without placing too much strain on our mental gear, look forward to a theoretically delightful time when we shall all be engaged with matters of which we have no practical experience; when the clergymen will be devoting their attention to manufacturing whilst manufacturers turn to the art of healing; when the doctors will go in for finance (some people think they do so now) whilst capitalists take to the practice of the law and lawyers forsake the bar for the pulpit and discourse, not of litigation but of brotherly love. And to complete the cycle the R. Road men will of course occupy the chairs vacated by college presidents and professors who have deserted their cloistered lecture rooms for the board-rooms of big business. And thus a new field may be opened up to the harassed (and criminal) R. Road fraternity as well as to college presidents, and with just as much chance of success for the former as for the latter.

Are We Coming to This?

WITH the fifty-seven varieties of regulation the railroads and other public utilities have to contend with, the modern business letter may soon, of necessity, look something like the following:

"GENTLEMEN:

"Referring to your letter (See Postal Regulation, p. 126, pp. 44) of the 28th, we (a corporation organized under the laws of Ohio, certificate filed in the office of the Secretary of New York State, New York) beg to advise you that we can quote the price of $20.00 (See United States Revised Statutes, Law of 1914. Sec. 18) per ton, carload lots (See Interstate Commerce Ruling 256; see also Dicta in 128 U. S. 264, Brown vs. Pennsylvania Railroad Company 168 Pa. 267).

"This quotation is special to you (See Ruling of Department of Justice in the matter of the Brown Milling Company) and is made subject to our right to claim immunity(See N. Y. Penal Code, pp. 48). If you receive a better quotation from any one of our competitors you will, of course, advise us under the authority of U. S. Revised Statutes, p. 2247, sub. 2. We shall be glad to fill your order subject to rule laid down in leading case of Jackson vs. Cobb, 126 U. S. 232, and will ship according to your instructions (See Rule 37, New York Public Utility Commission). Yours very truly, J. P. JONES.

"Pres. Jones Mfg. Co.

"State of Ohio, County of Fairfield—ss.

"J. P. Jones, being duly sworn, deposes and says that he has submitted the foregoing letter to his counsel and has been advised that it is legal; that deponent is not a director of any bank,trust company or transportation company, that the Jones Mfg. Co. has never had its charter forfeited, nor has deponent ever been indicted by either state or federal jury.

"(Seal.) J. WHITE, *Notary Public*."

Personal

H. H. Westinghouse.

AT a recent meeting of the board of directors of the Westinghouse Air Brake Company, held at Wilmerding, Pa., Mr. Henry Herman Westinghouse was elected president to succeed his brother, the late George Westinghouse, founder of the Air Brake Company and numerous other Westinghouse interests.

Mr. H. H. Westinghouse was born at Central Bridge, Scoharie county, New York, in 1853. He attended the schools of Schenectady, and later entered Sibley College of Engineering at Cornell University, Ithaca, N. Y. Mr. Westinghouse is married and lives in New York City, having a country residence at Kidders, N. Y.

Like his brother, Mr. Westinghouse inherited from his father a fondness for mechanics and invention. He invented the well known high-speed, single-acting Westinghouse steam engine for the manufacture of which the Westinghouse Machine Company was organized in 1880. This is said to have been the only commercial steam engine invented by any of the Westinghouse family.

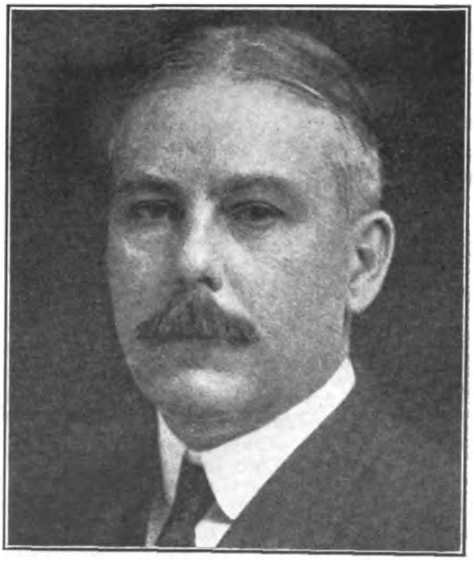
In 1873 George Westinghouse invited his younger brother to Pittsburgh to assist him in the management of the Air Brake Company, with which organization he has been connected ever since, for many years past being its first vice-president, and has been prominently identified with several other of the Westinghouse industries.

Mr. Westinghouse has always taken a great personal interest in the affairs of the Air Brake Company's employes, being an active member of the Veterans' Association of that company, and instrumental in the promotion of the welfare work and pension plan so successfully exploited by this company.

Mr. Westinghouse was also the organizer, and for a number of years, the guiding spirit in the management of the Westinghouse-Church-Kerr Company.

In his profession of mechanical engineer, Mr. Westinghouse ranks very high, his particular gift being the design of machinery in which branch he is considered an expert.

He is quite unassuming and singularly democratic with the men in the shop and is known by practically all of the employes. He was a par-

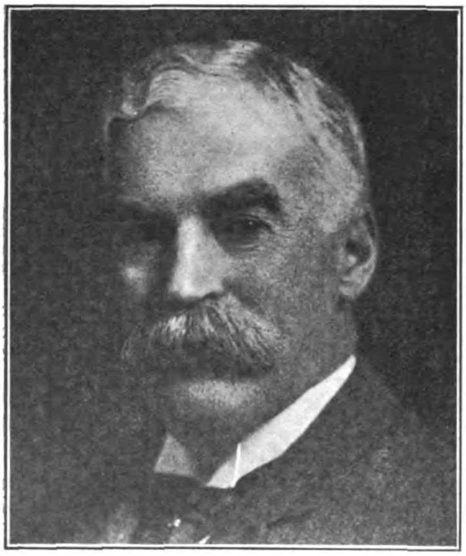


HENRY H. WESTINGHOUSE.

ticularly intimate associate of his late brother and was his most faithful lieutenant in the management of his numerous affairs.

William Hodgins Biggar.

WILLIAM HODGINS BIGGAR, who, on September 15th, was elected vice-president of the Grand Trunk Pacific Railway Company, was born at The Carrying Place, Ont., September 19, 1852. He was educated at Upper Canada College, Ont., and was admitted to the bar in August, 1880. On October 2, 1890 he was appointed Q. C. Mr. Biggar entered railway service as partner of the late John Bell, K. C., of Belleville, Ont., and in February, 1881, became general solicitor of the Grand Trunk Railway. On December 31, 1902, he was appointed assistant general counsel of the same road and on December 1, 1904, became general solicitor of the Grand Trunk Railway and the Grand Trunk Pacific Railway. On January 10, 1910, he was made general counsel for both systems, which position he held at the time of his recent election to the vice-presidency.



WILLIAM H. BIGGAR.

Fred Zimmerman.

FRED ZIMMERMAN, who has recently been elected vice-president of the Chicago, Indianapolis and Louisville Railway, in charge of the company's traffic and office at Chicago, was born July 26, 1866, at Portland, Me. He entered railway service in 1882, since which he has been consecutively to October, 1883, office boy and clerk with the Green, Kankakee, Chicago and Louisville Southern and Southern Despatch Fast Freight Lines; October, 1883, to April, 1887, clerk, Chicago and Ohio River Road; April, 1887, to February, 1890, rate and tariff clerk, general freight department, Louisville, New Albany and Chicago Railway at Chicago, Ill.; February, 1890, to February, 1890, rate and tariff clerw, general freight department, Michigan Central Railroad at Chicago, Ill., and Detroit, Mich.; April, 1897, to October 1, 1899 chief clerk, same department at Detroit; October 1, 1899, to July 1, 1900, assistant general freight agent at Buffalo, N. Y.; July 1, 1900, to November 1, 1909, assistant general freight agent, same road at Chicago; November 1, 1909, to January 1, 1911, general freight agent, Indiana Harbor Belt Railroad; January 1, 1911, to March 1 1914, general freight agent Chicago, Indiana and Southern and Indiana Harbor Belt railroads. In May, 1914, he was appointed general freight agent of the Lake Shore and Michigan Southern and the Dunkirk, Allegheny Valley and Pittsburgh railroads, with office at Cleveland, Ohio, which position he held at the time of his recent appointment.

FRED ZIMMERMAN.

Brooks Morgan.

BROOKS MORGAN, who, on October 1st, became vice-president of the Atlanta, Birmingham and Atlanta Railway, was born at Lexington, Ky., on September 22d, 1874 He

BROOKS MORGAN.

was educated at the Kentucky State University and entered railway service as clerk with the Southern Railway at Lexington in 1891. He served this road in the capacity of ticket agent and chief clerk of the passenger department at Louisville, Ky., and also as district passenger agent and assistant general passenger agent at Atlanta, Ga. Later he became chief assistant general passenger agent of the Southern Railway at Washington, D. C., which position he resigned in 1907 to take charge as vice-president and general manager of the Frank E. Block Company, the largest candy and cracker manufacturers in the South. Mr. Morgan has always been active in the social and business developments of the community in which he resided and has been president of the American Cracker Bakers' Association; president of the Biscuit and Cracker Manufacturing Company of New York; member of the executive committee of the National Confectioners' Association, and vice-president of the Atlanta Chamber of Commerce and the Piedmont Club.

H. Adkins.

H. ADKINS, who has recently been made general manager of the Tennessee, Kentucky and Northern Railroad Company, with headquarters at Livingston, Tenn., began his railroad career in the machine works and shops of the Atchison, Topeka and Santa Fe in 1897. His next position was with the Illinois Central Railroad from where he went to the Tennessee Central Railroad as assistant engineer and chief clerk and office engineer in the chief engineer's office. Mr. Adkins was with the Frisco during the construction of the Beaumont-Houston lines and was also employed for four years on the relocation construction work of the Panama Railroad. At the time of his recent promotion he was general superintendent and chief engineer of the Tennessee, Kentucky and Northern Railroad.

John Malcolm Rapelje.

JOHN M. RAPELJE has been appointed general manager of the Northern Pacific lines at East Paradise, Mont., succeeding E. A. Goodell, deceased. Mr. Rapelje was born in Chippewa, Ont., in 1857, and was educated in the public schools. He entered railway service in 1879, as a brakeman on the Grand Trunk, and then became a fireman on the Atchison, Topeka and Santa Fe. From May, 1882, to November, 1887, he was conductor on the Canadian Pacific, and from January of the following year to June, 1898, was conductor on the Yellowstone division of the Northern Pacific. He was then appointed trainmaster on the same division, and subsequently became conductor until June, 1902, when he again became trainmaster on the same division. From April, 1905, to July, 1908, he was superintendent of the same division at Glendive, Mont., and then to May, 1910, was superintendent of the Rocky Mountain division at Missoula, Mont. He was then superintendent of the Idaho division at Spokane, Wash., until April, 1912, when he was appointed general superintendent of the lines from Mandan, N. D., to Paradise Mont., with headquarters at Livingston, Mont. In May, 1914, he was appointed assistant general manager at St. Paul, Minn., which position he held at the time of his recent appointment.

JOHN M. RAPELJE.

William T. Grier.

WILLIAM T. GRIER has been appointed to the new position of general traffic manager of the Lehigh Valley Railroad, in charge of both passenger and freight traffic, reporting to Mr. T. N. Jarvis, vice-president of the company. His headquarters will be at 143 Liberty street, New York, the general offices of the company. Mr. Grier's railroad career began in 1883 when he entered the service of the Philadelphia and Reading Railroad as an office boy. Later he was with the Beech Creek Railroad, afterwards absorbed by the New York Central and Hudson River Railroad, in charge of both freight and passenger traffic. Mr. Grier came to the Lehigh Valley Railroad on June 1, 1906, as general coal agent. Two years ago his duties were extended to include some of the merchandise freight traffic and his title was made general coal and freight agent.

WILLIAM T. GRIER.

W. T. Webster.

W. T. WEBSTER has been appointed general freight agent of the Chicago, Indianapolis and Louisville Railway, succeeding O. C. Carter, resigned. Mr. Webster was born August 21, 1872, at Jackson, Mich., and was educated in the public schools of Jackson and Kalamazoo, Mich. He entered railway service in 1886 and was for four years in the accounting and traffic departments of C. K. and S. Railway at Kalamazoo, Mich., after which, from 1890 to 1896, he occupied various positions in the freight service of the Grand Trunk, Michigan Central and Pere Marquette railways in Michigan, resigning his position of chief rate clerk in the general freight offices of the Pere Marquette Railway in Grand Rapids, Mich., on May 15, 1896, to go with the Monon as their Michigan representative. He served the Monon as commercial agent at Grand Rapids, Mich., for fifteen years; was appointed general agent at Chicago on July 1, 1911; promoted to position of division freight agent at Bedford, Indiana, on July 1, 1912, and became general freight agent on October 1, 1914.

W. T. WEBSTER.

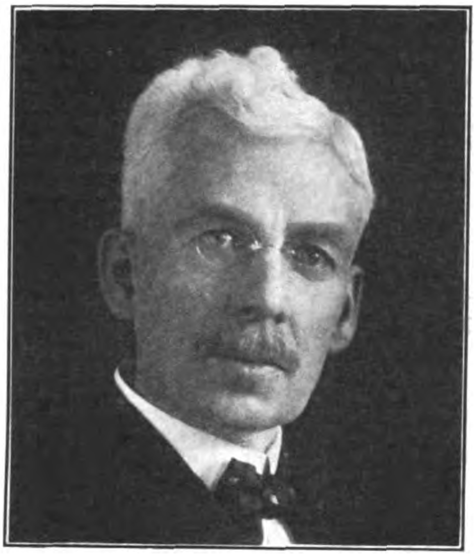
W. P. Hinton.

W. P. HINTON, who has recently been transferred to Montreal and appointed assistant passenger traffic manager for the entire Grand Trunk System, was born in Hintonburg, Ont., now part of the capital city of Ottawa, in 1871; educated in Ottawa, and entered the service of the Canada Atlantic Railway Audit Department in that city in 1887. In 1891, entered the traffic department as rate clerk and in 1898 was appointed assistant general freight agent. Appointed general freight agent in 1901 of the Canada Atlantic and the Canada Atlantic Transit Company, and in 1903, general freight and passenger agent. When the Canada Atlantic was taken over by the Grand Trunk in October, 1905, became general agent, passenger department, of the latter company in Ottawa in charge of immigration and trans-Atlantic steamship business. In January, 1907, was appointed assistant general passenger agent, Montreal, and in May, 1909, became the first general passenger agent of the Grand Trunk Pacific Railway, to which was added in 1910 the Grand Trunk Pacific Coast Steamship Company, Limited. In February, 1914, he was made assistant passenger traffic manager of the Grand Trunk Pacific Railway and the Grand Trunk Pacific Coast Steamship Company, which position he held at the time of his recent appointment.

W. H. HINTON.

Harry George Elliott.

HARRY GEORGE ELLIOTT, general passenger agent of the Grand Trunk Railway, was retired under the pension regulations of that company on November 4th, after a long and successful career. Mr. Elliott was born August 22, 1860, and entered railway service in 1882, as ticket agent of the Central Vermont Railroad

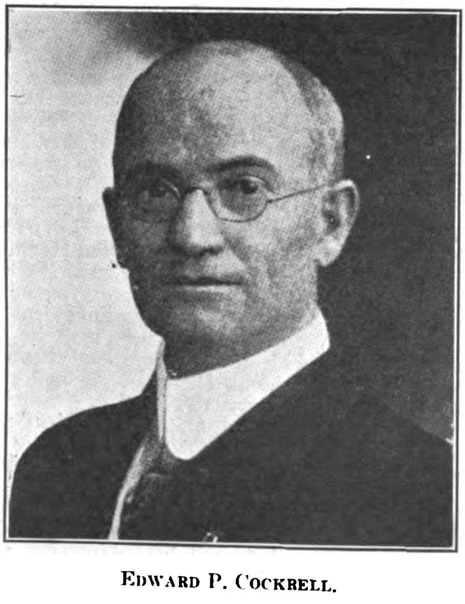


HARRY G. ELLIOTT.

at Montreal, Que. Since then he has been consecutively, May to July, 1897, ticket agent Grand Trunk Railway at Montreal; July, 1897, to August, 1899, excursion clerk, general passenger and ticket department, same road; August, 1899, to April, 1900, chief clerk same department; May, 1900, to June, 1909, assistant general passenger and ticket agent, same road; July, 1909, to June, 1910, first assistant general passenger agent at Montreal; June 15, 1910, to February, 1911, first assistant general passenger agent at Chicago; March, 1911, to date, general passenger agent at Montreal.

Edward P. Cockrell.

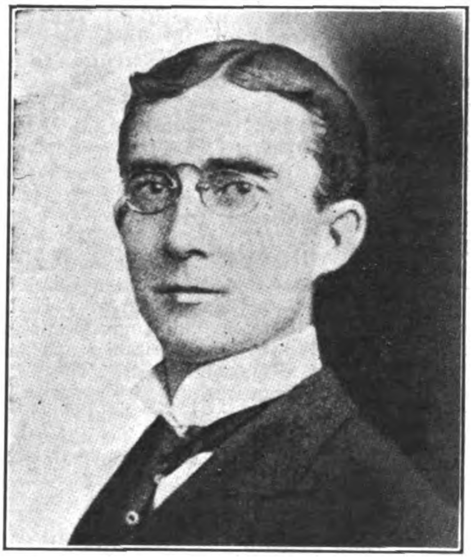
EDWARD P. COCKRELL, who, on January first, will become general passenger agent of the Chicago, Indianapolis and Louisville Railroad, with headquarters at Chicago, was born in 1870 at Kinnmundy, Ill. He was educated in the public schools and entered the employ of the Chicago and Atlantic in April, 1899. In September of the following year Mr. Cockrell went to the Chicago, Indianapolis and Louisville, with which road he has remained ever since. He was rate clerk until April, 1891, when he was advanced to chief clerk, which position he held until August, 1909. He was then promoted to assistant general passenger agent, which office he will retain until the beginning of the new year.



EDWARD P. COCKRELL.

Thomas A. Clarkson.

THOMAS A. CLARKSON, for the past seven years secretary to E. C. Lewis, chairman of the board of directors of the Nashville, Chattanooga and St. Louis, has been elected secretary of that company, with headquarters at Nashville, Tenn. Mr. Clarkson has been in railway service for 26 years, having begun railway work as a clerk in the accounting department.



THOMAS A. CLARKSON.

OBITUARY.

Charles L. Atterbury.

CHARLES L. ATTERBURY, formerly assistant and attorney to the president of the New York, Lake Erie and Western, now the Erie, died on November 10, at his home in New York. He was born on December 3, 1842, at Detroit, Mich. After graduating from Yale in 1864, he studied law in Detroit. He was in the legal department of the Erie for many years down to about 1885.

John Hall Browning.

JOHN HALL BROWNING, president of the Northern Railroad of New Jersey prior to its acquisition by the Erie Railroad, and since then senior member and a director of the firm of Browning, King and Company, died suddenly, October 26, in the Erie Railroad ferry house at the foot of Chambers street, New York. Mr. Browning, who was born at Orange, N. J., December 25, 1842, was at one time treasurer of the New York and Hackensack Railroad and the East and West Railroad of Alabama.

George A. Clark.

GEORGE A. CLARK, president of the Tennessee, Kentucky and Northern, died at the Hyde Park Hotel, Chicago, on October 11, aged 45 years. He began railway work in 1880 with the Chicago, Milwaukee and St. Paul as messenger, and subsequently was employed with that road, the Chicago, St. Paul, Minneapolis and Omaha, the Atchison, Topeka and Santa Fe, the St. Paul and Duluth the Chicago Great Western, the Great Northern and the "Soo" Line successively as clerk, agent, telegraph operator, train despatcher and trainmaster. From 1895 to January, 1903, he was with the Illinois Central as trainmaster, superintendent of the Omaha division at Ft. Dodge, Iowa; superintendent of the Springfield division at Clinton Ill., and superintendent of the Tennessee division at Fulton, Ky. He then became general manager of the Tennessee Central, and subsequently was vice-president and general manager until December, 1905, at which time he went to the New Orleans, Texas and Mexico as vice-president. In July, 1908, Mr. Clark returned to the Tennessee Central as general manager, and in October, 1909, he was appointed receiver of the Cincinnati-Nashville Southern, which office he held until he became president of the Tennessee, Kentucky and Northern in September, 1912.

Charles J. Drury.

CHARLES J. DRURY, master mechanic of the Atchison, Topeka and Santa Fe Railway, died at the age of 36 years. He was born at Chicago Junction, Ohio, and began railway work in July, 1895, as machinist apprentice for the Atchison, Topeka and Santa Fe. After completing his apprenticeship in July, 1889, he was employed as machinist for that road, the Southern Pacific, the Kansas City Southern, the El Paso and Southwestern, the Chicago, Rock Island and Pacific and other roads for seven years, becoming roundhouse foreman for the Santa Fe at La Junta, Colo., in July, 1906. He remained with the Santa Fe until February, 1913, filling the positions of general foreman at Albuquerque, N. M.; bonus supervisor of the Western Grand division; master mechanic of the Oklahoma division at Arkansis City, Kan., and master mechanic of the Plains division at Amarillo, Tex. He then became master mechanic of the St. Louis and San Francisco at Ft. Smith, Ark., and the following February was appointed superintendent of shops at Springfield, Mo. Mr. Drury was promoted to division master mechanic at Sapulpa, Okla., on September 1, just prior to his illness of typhoid fever from which he died on September 30. Mr. Drury's father, M. J. Drury, is superintendent of shops of the Santa Fe at Topeka, Kan.

Thomas Eedson.

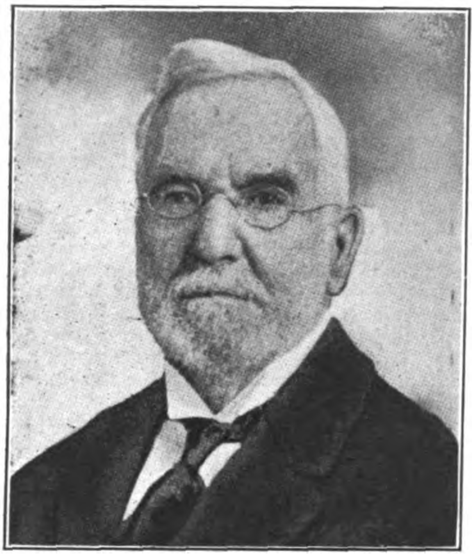
THOMAS EEDSON, formerly auditor of freight accounts and freight claim agent of the Michigan Central, died at his home in Detroit, Mich., on November 1. Mr. Eedson was born January 4, 1842, at Niagara, Ont., and began railway work in 1872 in the treasurer's office of the Canada Southern then under construction. He continued with that company as cashier from the commencement of its operation up to the time of its operating agreement with the Michigan Central on January 1, 1883, when he became a clerk at St. Thomas, Ont. In September of that year he was transferred to Detroit, Mich, as clerk in the auditor's office, and subsequently was chief traveling auditor, freight accountant and freight claim agent, until July, 1905, when he was appointed auditor of freight accounts and freight claim agent. He held the latter positions until February 1912, when he was retired under the pension rules of the company.

George A. Goodell.

GEORGE A. GOODELL, general manager of the Northern Pacific Railway, with headquarters at St Paul, Minn., died on October 3, aged 59 years. Mr. Goodell entered railway service July, 1868, when he began as messenger boy for the Chicago, Burlington and Quincy Railroad. He was successively telegraph operator, station agent and train despatcher of that road until July, 1876, when he became ticket agent of the Toledo, Peoria and Warsaw at Burlington, Iowa. He was later with the Burlington, Cedar Rapids and Northern, as telegraph operator and successively station agent, train despatcher, superintendent of telegraph, assistant superintendent and superintendent, until March, 1902, when he was appointed general superintendent of the Chicago Great Western Railroad at St. Paul. He was appointed general superintendent of the Central district of the Northern Pacific in December, 1907, and in November, 1909, he was promoted to general manager of the lines east of Paradise.

Oliver S. Lyford.

OLIVER S. LYFORD, vice-president of the Chicago and Eastern Illinois, who died on October 12, after 68 years of railroad service, was born June 19, 1823, at Mount Vernon, Maine. His record is one of the most remarkable in railroad history. He began work in January, 1846, with the Boston and Lowell, remaining with that road until February, 1851, successively as watchman, assistant baggage man, ticket agent and extra passenger conductor. He then went to the Erie as shop clerk at Dunkirk, N. Y., and from November, 1851, to October, 1855, was a passenger conductor. In October, 1860, he became joint station agent of the Erie and the Atlantic and Great Western at Salamanca, N. Y., from November, 1863, to April, 1869, was division superintendent of the latter road, and then until November, 1871, was assistant general superintendent. The following eight months he was superintendent of the Buffalo and Rochester divisions of the Erie, leaving that road in July, 1872, to become general superintendent of the Hannibal and St. Joseph, where he remained until November, 1873. From December, 1874, to November, 1876, Mr. Lyford was general superintendent of the Kansas Pacific, and in January, 1878, he became connected with the Chicago and Eastern Illinois as superintendent. He was appointed general manager in February, 1886, and in November of the following year became vice-president and general manager. He relinquished the duties of general manager in February, 1890, but retained the office of vice-president until he was formally retired on July 1, 1913. Of recent years he had not been active in railroad service, but went to his office nearly every day until his retirement, and occasionally afterward.



OLIVER S. LYFORD.

George N. Mills.

GEORGE N. MILLS, who had been real estate and tax agent of the Missouri district of the Chicago, Burlington and Quincy since 1897, died at his home in St. Louis, Mo., October 7.

George Morrison Roberts.

GEORGE MORRISON ROBERTS, formerly for many years New England passenger agent of the Pennsylvania Railroad at Boston, Mass., died on October 27, at his home in Malden, Mass., at the age of 76.

Charles Ottey Gwatkin.

CHARLES OTTEY GWATKIN, who in recent years has been engaged in special work for the Northern Navigation Company and the Grand Trunk Railway, died at Sarnia, Ont., October 9, at the age of 64 years. He was born at Lynchburg, Va., November 9, 1850, and began railway work in 1880 as agent for the Great Western Despatch Fast Freight Line at Binghamton, N. Y. In October, 1885, he was made traveling freight agent of that line at Boston, Mass., and subsequently was with the Wisconsin Central Lines as New England agent, commercial agent at Boston, and general Eastern agent at New York, until May, 1900. Later for a period of two years he was general manager of the Guatemala Government railways, and previous to his connection with the Grand Trunk and the Northern Navigation Company he was employed as traffic manager for an industrial concern in the East.

Brayton Ives.

BRAYTON IVES, formerly president of the Northern Pacific Railway, died October 22 at his country home in Ossining, N. Y., at the age of 74. General Ives was once president of the New York Stock Exchange, was subsequently president of the Western National Bank of New York, and he served as president of the Northern Pacific from October 20, 1893, to 1896. He was afterwards president of the Metropolitan Trust Company and president of the Kanona and Pittsburgh Railway.

Walter Lee McGill.

WALTER LEE McGILL, secretary of the Southeastern Freight Association, died at his home in Atlanta, Ga., on the morning of October 27th, after a confining illness of three years. Mr. McGill was 50 years old, was born in Bainbridge, Ga., and had lived in Atlanta for twenty-five years, or since his entry into the service of the Southeastern Freight Association.

He entered the railway service in 1882 as a clerk in the office of H. W. Woolf, who is now manager of the Southern Weighing and Inspection Bureau, a railroad organization in the Grant Building. Mr. Woolf was at the time auditor of freight receipts for the old East Tennessee, Virginia and Georgia Railway at Knoxville, Tenn.

From Knoxville, in 1883, he came to the office of J. J. Griffin, assistant general freight agent of the East Tennessee, Virginia and Georgia in Atlanta, where he remained about two years. He was later employed in several railroad positions, and in 1888 or 1889 accepted a position as rate clerk in the office of the Commissioner of the Southern Railway and Steamship Association, remaining with that Association and its successors until the time of his death. He was made chief clerk of the Association in September, 1890, and secretary on January 1, 1894, succeeding A. Pope. The Southern Railway and Steamship Association was succeeded by the Southern States Freight Association in 1895, and the latter was, in turn, succeeded by the Southeastern Freight Association in 1897.

WALTER L. McGILL.

Will George Van Vleck.

WILL GEORGE VAN VLECK, vice-president and general manager of the Sunset-Central lines in Texas and Louisiana, with office at Houston, Tex., died on November 10, at his home in Houston. He was born on March 5, 1857, at Elbridge, Onondaga county, N. Y. He received a common school education, and began railway work in August, 1873, as a telegraph operator with the Grand Rapids and Indiana, remaining with that company for two years. He went with the Galveston, Harrisburg and San Antonio in October, 1875, where he until 1885 was consecutively, for one year telegraph operator, four years despatcher, one year chief despatcher, one year trainmaster of the Mexican and Pacific extension, and two years division superintendent. For over two years from March, 1885, he was superintendent of the San Antonio division; he was then transferred to the Louisiana division of the Southern Pacific Company, and six months later was made general superintendent of the lines in Texas. From October, 1895, he was manager of the Galveston, Harrisburg and San Antonio, and the Texas and New Orleans, and for a number of years was also second vice-president of those lines, until his election in December, 1911, as vice-president and general manager of the Sunset-Central lines.

Edward Francis Winslow.

EDWARD FRANCIS WINSLOW, formerly president of the St. Louis and San Francisco Railroad, died on October 22, at Canandaigua, N. Y. He was born on September 28, 1837, at Augusta, Me., and began railway work in 1860. He served in the United States army during the Civil War and rose to the position of brigadier general of volunteers. From 1867 to 1868 he was the chief contractor engaged in the construction of the St. Louis, Vandalia and Terre Haute, now a part of the Vandalia Railroad. He was then to 1873 president during the construction of the St. Louis and Southeastern, now a part of the Louisville and Nashville Railroad, and during 1872 was also a contractor on the construction of the Cairo and Vincennes, now a part of the Cleveland, Cincinnati, Chicago and St. Louis. From 1875 to 1876 he was receiver of the Burlington, Cedar Rapids and Minnesota and then to November, 1879, was vice-president and general manager of the same road, which was reorganized as the Burlington, Cedar Rapids and Northern and is now a part of the Chicago, Rock Island and Pacific Railway. He was subsequently vice-president of the Atlantic and Pacific, now a part of the Atchison, Topeka and Santa Fe system; vice-president and general manager of the Manhattan Elevated Railways of New York City, and in March, 1880, became president of the St. Louis and San Francisco. The following year he became president also of the New York, Ontario and Western Railway, and in addition was president of the North River Construction Company, the chief contractor engaged in the construction of the New York, West Shore and Buffalo, now the West Shore Railroad.

Stephen W. White.

STEPHEN W. WHITE, formerly assistant secretary of the Pennsylvania Lines West of Pittsburgh and secretary of the Northern Central at Philadelphia, Pa., died on October 16, at his home in Philadelphia, at the age of 74. He entered the service of the Northern Central in 1875 as assistant secretary; two years later he was appointed secretary of the same road, and from 1881 was also assistant secretary of the Pennsylvania Lines West until his retirement in 1910 under the pension rules.

Something for Nothing; An Economic Fallacy

NOTE: The following paragraphs are taken from an address delivered before the Pittsburgh Chamber of Commerce on October 14th, by Ivy L. Lee, executive assistant of the Pennsylvania Railroad.

EVEN before the plague of war afflicted the family of nations, the United States was suffering from arterio sclerosis, in that the blood vessels of its commerce were hardening; failing to respond to the expanding business life of the country.

To-day we are confronted with the fateful possibilities to our national life of the most terrible cataclysm in the history of mankind. Though we do not participate in the struggle, we suffer with the whole world the devastations of the economic volcano.

All civilization is stricken. He is indeed a bold man who will prophesy, but this much we know: Destruction of wealth is proceeding upon a gigantic scale; production has been enormously curtailed; and demands for the world's capital are becoming ever greater and more insistent.

It is clear that in this country we have now to look forward to a period of economic convalescence. The symptoms of sickness in our business life are too plain to ignore. We must plan now to build up, to repair, to reconstruct. This country cannot and will not stand still.

Yet, at such a critical moment in the world's history, our country is,—unwitting I believe—committing against the railroad the most dangerous of business sins, namely: taking something without paying a fair price for it. To be concrete:

The Eastern railroads of the United States invested in their property in the three years 1910-1913, the sum of $600,000,000 new money. Yet at the end of the fiscal year 1914, these same companies were $90,000,000 worse off in net earnings than before the $600,000,000 had been spent.

During the past four years the Pennsylvania Railroad system increased its gross business by $34,000,000, but the increased expense of handling the business was $55,000,000. Thus the increase of $34,000,000 in gross earnings was counterbalanced by a loss of $21,000,000 in net revenues.

To remedy this situation additional earnings are necessary. Such additional revenues would supply the substance with which to develop the arteries of trade. But something else is needed. The American railway system has been built up through the enterprise and ability of the ablest business brains in the country. We pay the highest wages, the highest taxes in proportion to the investment, and, with the lowest capitalization per mile, do our business for the lowest freight rates charged on the railroads of any of the great nations.

This result has been produced by encouraging, promoting and fostering railroad enterprise. The railroad was the great constructive force in our national life. Men risked money and comfort to build railroads, that factories and farms might follow in their wake. As a great English economist has said, "In a country the most extravagant in the world, you have developed a railroad system which handles traffic more economically than anywhere else in the world."

But, is there reason to expect a continued display in our railroading of this supreme initiating and efficient activity? Only a few years ago, railroad effort was spent in devising means to give the greatest possible amount of service for the lowest rates; the tendency now is to force railroads to give the least possible service for present rates.

As a result of the vast effort and ability expended, the American railroad system had become the wonder of the industrial world, but the tendency of all governmental regulation now is to invade the field of the very management which had produced this wonderful result. No sane railroad officer can object to earnest, impartial, non-political governmental regulation, especially where the design is to prevent discrimination and the imposition of burdensome rates.

But the Federal Government and the forty-nine States are pulling and tugging at railroad managers, giving conflicting orders, imposing the caprice of theorists oftentimes, over the experienced judgment of experts. The field within which railroad managers may exercise their trained abilities is slowly diminishing. Expenditures are being arbitrarily imposed, regardless of their relative desirability.

Railroad officers are not permitted to spend the time they should give to creative activity. The president of a large trunk line railroad a few days ago, after a very busy and burdensome day in New York, remarked, "I have done a hard day's work, and yet not one single minute of my time has been devoted to the purpose I ought to be mainly serving, and that is operating the railroad."

It is no uncommon occurrence for every general traffic officer of the Pennsylvania Railroad to be away from Philadelphia at different places looking after business incidental to governmental regulation. It is obvious that such enforced activities are not creating new business nor helping to build up the country.

This invasion by government of raliroad management is one of the disquieting elements of the future. Government regulation—so sound in theory—has up to now developed this situation. The public demands improving service; the increased and improved service does not pay its way: yet the Government burdens upon railroads are undiminished; and the Government, while continually interfering with management, accepts no responsibility for the financial result. The tendency is to benumb active forces of national progress. Investors are gravely concerned, and our policies so hamper and hinder those who conduct railroads that atrophy threatens those managerial muscles, which are so necessary to the healthy development of the arteries of commercial life.

To restore the health of the railroads, to make them the efficient agency of commerce which they should be, we should provide them with ample revenues, and, in addition, prevent the Government from meddling with management. Insist that railroads play fair and perform their due obligations—yes—but outside of that, encourage and foster a spirit of enterprise, enthusiasm and energy on the part of railroad managers themselves so that American trade may continue to enjoy the service of the greatest transportation system in the world.

The Safety Problem of the Railways

NOTE: The following address was delivered by Mr. W. B. Spaulding, chairman of the Central Safety Committee of the St. Louis and San Francisco Railroad before the Congress of the National Council for Industrial Safety, held in Chicago on October 13th.

SINCE the initial construction of railroads their safe operation has been a subject of paramount concern to those upon whom devolved the manifold responsibilities of their management.

This was sought to be attained by the promulgation and enforcement of enlightened rules dictated by the combined knowledge and experience of all persons upon whom this responsibility rested.

The great success that has attended their efforts to secure safety in the transportation of passengers is manifest in the fact that during the fiscal year ending June 30, 1913, (the latest figures published) there were in round numbers one thousand million passengers transported by the railroads of this country of which but 403 were killed and but 181 of these were killed in train accidents. The rest, or 222, were killed by other causes, such as getting on and off trains; struck at stations and in other like ways for which occurrences the victims themselves were probably alone responsible. The figures given include passengers carried on freight trains.

Accident insurance companies have long recognized the very great degree of immunity of passengers from death and injury in consequence of the provisions railroads have made for their safety and evidence their confidence in the effectiveness of these provisions by giving passengers, for the same price, double the indemnity against injury they may sustain while traveling on a railroad as they can obtain against injuries liable to occur in their own homes.

While railroads have been able by vast expenditures of money on roadway and equipment and for safety devices; by educating trainmen in the knowledge of rules governing the movement of trains and being able, because of the necessity of keeping constant supervision over train movements, to secure, to a large degree, obedience to those rules to thus safeguard their passengers, it has not been possible for them to secure similar observance of rules promulgated for the protection of their employes generally from physical injury and death and whose retention in the service is of vital concern to them.

The inadequacy of rules and discipline to stop the annually increasing number of employe injury cases became apparent several years ago. A study of the situation revealed the reason to be that the employes, not the company or its officers, controlled the majority of the causes of injury sustained by workmen, and, therefore, the logical thing to do was to interest the workmen themselves in the removal of all causes of injury possible before such injury occurred, not afterwards. Not as a matter of obeying rules, (which it seems is innate human nature to resent) but because of the benefit that would come to them and those dependent upon them by so doing.

This thought originated in the mind of Mr. R. C. Richards, a veteran investigator of accident cases, was formulated into a working plan by him and tried out on the Chicago and North-Western Railroad. Its success was immediate and so great that the plan was adopted and is now in successful operation on seventy-four of the great railroad systems of this country and Canada owning 200 thousand of the 240 thousand miles of railroad in these two countries. This employe safety movement has been in operation on these seventy-four railroads varying lengths of time. On some its inauguration is comparatively recent. I am in possession of data from three of the roads on which the movement has been longest in vogue, as well as some figures from seven other important railroads which I think will definitely indicate what can be accomplished by an injury prevention movement managed by the employes themselves.

On the three railroads with a mileage of 19,000 miles and 100,000 employes and an average of three years' experience in "Safety First" work, as compared with the same period prior to the inauguration of the employe injury prevention movement, there was a decrease of 457 fatal accidents, or 21 per cent, and a decrease of 14,843 non-fatal accidents, or 23 per cent.

On seven other railroads with a mileage of about 30,000 miles, during the first six months of the present year as compared with the same six months of last year, there were reductions made in casualties as follows: Fatal accidents, decrease 205, or 32 per cent; non-fatal accidents, 4,326, or 21 per cent.

The most difficult problems of railroad safety work arise from accidents, the causes of which are not within the control of the railroad company. It is this class of accidents that supplies by far the greater number of cases to the casualty list. These accidents may be divided into two classes:

(a) To the public.

(b) To the employes.

In respect to accidents which occur to the public by far the most numerous are to those persons who use railroad tracks as walkways and those who steal rides on trains, including boys who hop on and off moving trains as a pastime. Notwithstanding the appalling loss of life and limb from these causes annually, the general public, which is profoundly shocked and indignant when life is lost or serious injury occurs in a train wreck; the sinking of a ship at sea, or in a highway crossing accident, takes no more heed of it than if as many flies had been destroyed, yet it is the general public alone that has the power to put a stop to this great loss in the productive power of the State and Nation and save the victims to lives of usefulness and contentment. The warning signs the railroads erect and maintain at great expense are a useless thing in checking track walking. This is all the railroads can do in that direction. As a part of the movement for injury prevention something has been accomplished, just how much, it is not yet possible to say in figures, in persuading boys to abandon their train hopping and turntable pastimes by talks to them at their schools, oftentimes illustrated by stereopticon views; the giving of safety buttons as prizes for learning and reciting some pertinent "Nevers"; by constructing swimming pools for their use on condition they will keep away from the cars and not play on railroad premises; by reporting them to their parents and securing the aid of town officers.

I know of several towns where the employment of some of these methods resulted in absolute stopping of these dangerous pastimes by the boys. I thoroughly believe that all that is necessary to keep a boy from indulging in dangerous sports is to provide him with safe and attractive ones in which he can expend the excess energy of his youth. This, however, is a duty to the boy that should be performed by his parents or by the community in which he lives. Railroads should be relieved of this task.

A second difficult public safety problem is the ever-increasing number of persons who while riding in automobiles are struck on highway crossings by rapidly moving trains. As there is 50 feet clear space on each side of all railroad tracks assuring a clear view of an approaching train, if one will look, and as an automobile can be stopped in ten feet even when moving at a high speed, there seems no excuse for such occurrences except the spirit of chance taking automobile driving seems to inspire in many persons.

In respect to accidents that occur to employes I am firmly of the opinion that the most difficult problem in railroad safety work is to arouse a genuine, active, heartfelt interest in the foreman in safety work (I intend that the word "foreman" shall include every man, whatever his title, who has immediate authority over and the direction of other men in their work)—an interest that is based on his own mental conviction that the prevention of injury of each individual workman will increase the efficiency and production of all, lessen the cost of production and bring personal credit and promotion for himself and therefore of the first importance to him if he desires advancement; a conviction that when he has once secured a satisfactory and competent force of men that the loss of any one of them is a loss that affects him personally and detrimentally; a conviction that will cause him to give his workmen the same supervision and care to guard them against injury that he would instinctively give to a very valuable animal or a delicate and expensive machine he might own, and for the very same reason, i. e., because it is the sensible thing to do. A foreman interested in safety work because he had the intelligence to perceive its resultant benefits, made the statement to me that "foremen would not help safety." The foreman who made this statement was an exception to it and I knew personally of several other exceptions, yet I also feel equally certain that as a general statement it was a true one. This statement did not mean that foremen generally were indifferent to the safety of their men and would not regret the injury of any of them, but it did mean that the average foreman's first concern was production—the accomplishment of the work with a despatch and at a cost that would reflect credit on him and as the ideas underlying the movement for greater safety for workmen conflicted with notions and methods of doing work to which foremen generally had long been accustomed they would be opposed to a change which, though it would eliminate risks, would, in their judgment, retard the work and cause some loss of time to the men—in a word, that risks known to foremen generally are regarded as incident to the work and usually escaped; that injuries were to be regretted after their occurrence, not before. Unfortunately it is believed by many foremen that the man who will not take chances lacks spirit, while it should be the best of evidence that the man has good sense.

Some years ago a single track car line was built by a capitalist from the outskirts of St. Louis to a suburban town with turnouts at convenient points along the line for the passing of cars going in opposite directions. On Sundays the line did a rushing business carrying the city crowds to picnic and other outing grounds. The cars had a time schedule and designated turnouts for passing. There was an understanding, however, among the motormen that if a car was not at the meeting point on time, then in order to keep traffic moving and eliminate delay the other motorman should attempt to get to the next turnout before the delayed car had passed there. In undertaking a movement of this kind a collision of two cars occurred while going at top speed. It required several hours to extricate the more than half a hundred killed and injured passengers from the debris. The owner of the line was mercilessly excoriated and denounced by the newspapers. When asked by a reporter why his motorman did not remain at the scheduled meeting point until the delayed car arrived, he replied "that he would not give much for a motorman who would not try to steal a switch." I am of the opinion that for permanently successful injury prevention among employes and still greater safety for passengers the "boss" with "switch stealing ideas" should have the first attention of the safety evangelists.

The code of safety rules promulgated by railroads give evidence that their general officers realize that a well organized and trained force of employes is essential in order that the company may serve the public efficiently and prosper itself; that the frequent occurrence of injury among their force of employes is a serious impairment of both the company's ability to render good service and its chance to prosper. If those rules were obeyed by all employes, injury cases would be kept down to the minimum and a "Safety First" organization would not be required, but these rules are too frequently disregarded and the passing years have demonstrated there is no practical way to get them obeyed—*as rules.* An unpopular rule just like an unpopular law is not enforced. Both laws and rules must have the vitalizing force of the majority sentiment of the persons whom they affect behind them to make them effective. It is little use for a special missionary to travel around among thousands of employes preaching safety and attempting to convince them the company means what it says in a rule declaring:

"The company does not require nor expect its employes to incur any risks from which, by the exercise of their judgment and by personal care, they can protect themselves but enjoins upon them and demands that they shall take the time and use the means necessary to, in all cases, do their duty in safety,"

if the "bosses" under whom these men work are not in sympathy with that rule and ignore it because they do not appreciate its importance and value to their company and themselves.

A great enthusiasm for the prevention of work accidents may be aroused by large safety meetings of workmen; by the circulation of safety literature among them; by the efforts of their associates in work who are members of safety committees and in other like ways and gratifying decreases in injury cases immediately result from the activity of workmen so aroused, but unless the immediate "bosses" of these men have been aroused at the same time and become possessed of a conviction that will stick, the good results of all this effort will not long continue. A foreman's "wet blanket" will speedily extinguish all the fire in any enthusiasm thus aroused and things will continue as before. The cook book recipe says, "First, get your rabbit," and paraphrasing I say first get your foreman. Make them thorough converts to the cause of greater safety by convincing them that their own personal interests and the real interests of their superiors and their company are best served by the absolute prevention of injury among the workmen under their charge. One of the chief tests of the efficiency and competency of a superintendent and every junior official should be the freedom of his men from injury and it should be understood that the casualty record of every such official would be given serious consideration whenever promotions were to be made. Having thus captured the "boss" the rest of the problem is of comparatively easy solution.

It is agreed that supervision and education is the straight road to greater safety—the true solution of the injury prevention problem.

The best supervisor is the foreman, because he is always on the ground and for the same reason, assuming that proper regard has been had as to his competency when selected, he is the best educator for the knowledge he imparts will be practical, of present application and permanent value and his situation such that he may not only know that his instructions are understood, but he can see that they are followed. The safety missionary, the safety committees, safety literature and prizes will be distinct and valuable aids to the foreman in inspiring the necessary co-operative spirit among all their men.

The object and purpose of the National Council of Industrial Safety is, as I understand it, to cultivate a universal spirit for injury prevention in the United States, not alone among employers of labor great and small, but in the governments of states and municipalities and among the people generally. That in carrying out this purpose the council acts as a clearing house of information, distributing weekly to all its members the safety ideas, suggestions and experiences of other members.

A safety movement of national scope is, in my opinion, needed by the railroads of this country, because such an organization can be a most potent factor in cultivating a public sentiment which will demand the enactment and enforcement of laws that will stop the great trespass evil which is responsible for more than one half the death and more than six thousand of the serious injury cases that occur annually in the operation of the railroads of this country and which the railroads are powerless to prevent.

Because such an organization can do much to check the constantly increasing number of collisions of trains and automobiles at highway crossings by persuading auto drivers and others to use the care necessary at such crossings to insure their safety.

Because the activity of such an organization will tend to modify the almost maniacal desire and demand of the public for the speeding up of passenger train schedules to speeds that are unsafe and unwarrantably expensive and to inculcate a spirit in the public for the taking of greater care when getting on and off trains and when on railroad premises.

Because such an organization having as members some of the greatest industrial establishments and railroad systems in this country gives to each member the safety ideas and experience of all other members.

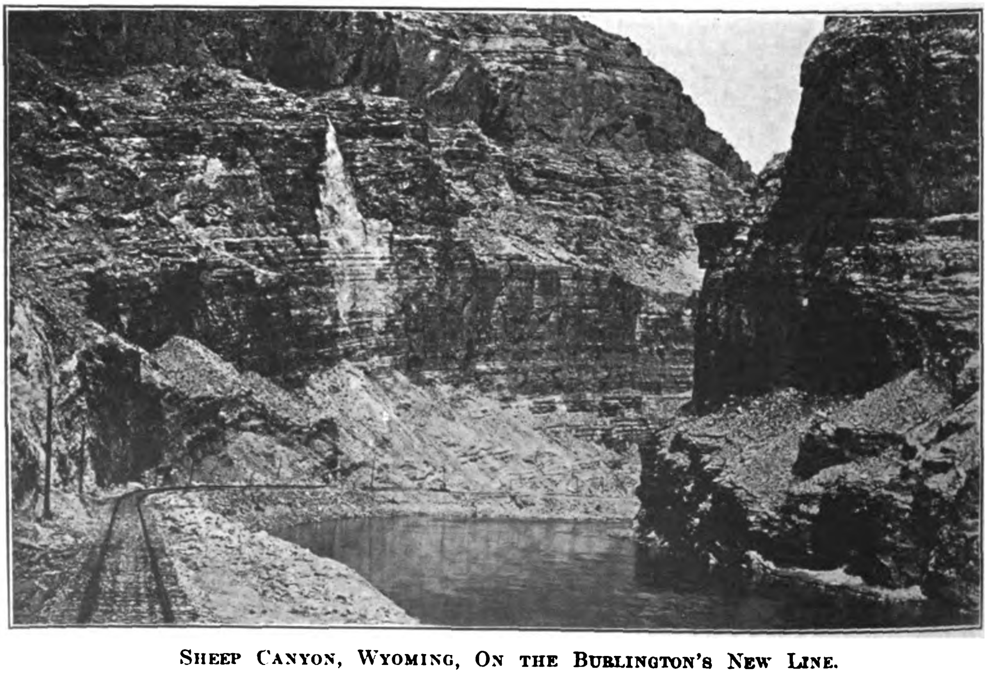
From Puget Sound to the Gulf of Mexico

NOTE: What a wonderful picture of commercial and industrial stimulation is found in the following paragraphs. This has always been the result of new railway construction but because, for the present at least, national regulative policies have checked, if not entirely stopped, new railway construction on any appropriate scale, this nation is suffering a grave misfortune which only a concerted public action can overcome. A long step in the right direction was taken at the November elections. Let it be hoped that the lesson was taken to heart and that the future will see our laws so conceived and applied that the great genius and creative force which has made the United States a leader among nations, will not continue to be arbitrarily and unfairly held in leash.

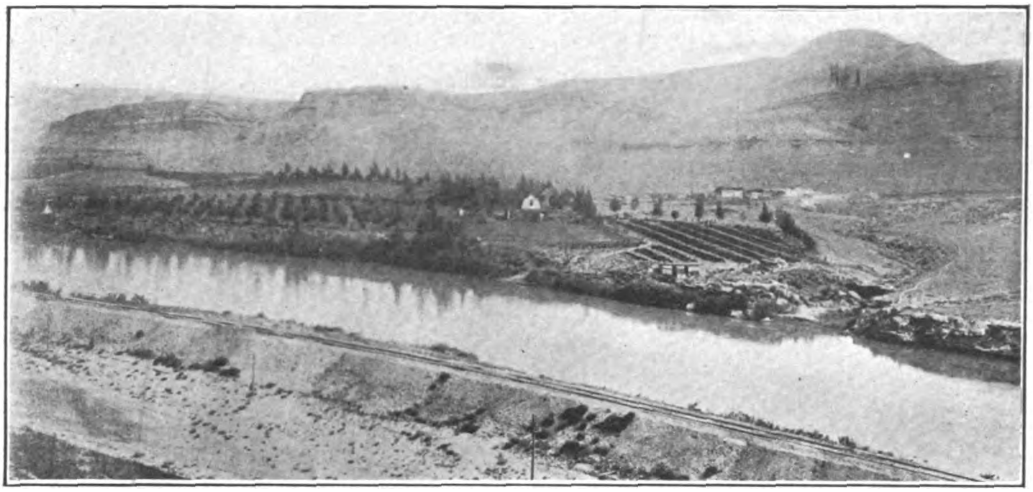
THE completion of the Burlington Railroad's last link in its Gulf-to-Sound railroad was the occasion of rejoicing in Wyoming, Colorado, and other Western States that will be benefited by this new trade artery.

The new line was officially opened Sunday, October 18 by the installation of train service between Casper and Orin Junction, Wyoming. This officially establishes the connection of the Burlington with the Colorado and Southern, giving the Hill system a direct line from Puget Sound to the Gulf of Mexico. Many new towns have sprung up along the line during the last few weeks, and townsites are being mapped out and streets laid out where there was nothing but barren prairie a short time ago. At the new town of Stephen large shipments of cattle and sheep are being made. Stock is trailed from the north and south to this shipping point over the old trail to the Montana gold fields. Fort Fetterman, near Stephen, and old Fort Phil Kearney, were built largely to protect the pioneers who traveled this trail. The Burlington's new line also follows the old North Platte trail along that stream from Orin Junction to Casper. In fact, through the connection with the Guernsey-Bridgeport branch of the Burlington, that line now has a road hundreds of miles along the North Platte, following the exact course taken by the pioneer gold seekers in the days of the California excitement.

From an engineering standpoint the new line is one of the marvels of the West. Many difficul-



SHEEP CANYON, WYOMING, ON THE BURLINGTON'S NEW LINE.



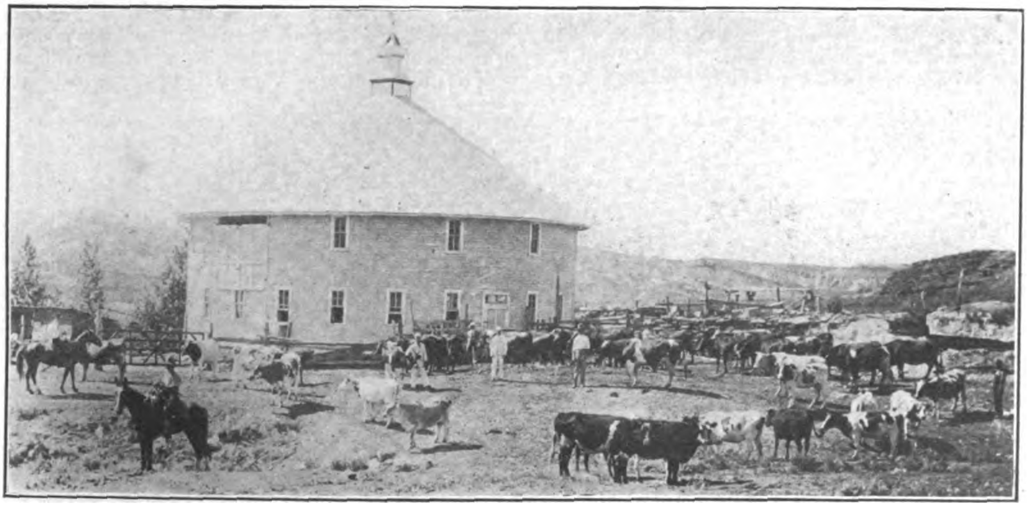
A WYOMING RANCH ON THE BURLINGTON'S NEW SOUND-TO-GULF LINE.

ties had to be overcome in constructing the last link in the Burlington's chain to the Gulf of Mexico. The divide between the Big Horn and North Platte has been pierced with an 800-foot tunnel. Work on this tunnel is still proceeding. Traffic is sent over the top of the divide via a temporary or "shoo fly" line. The tunnel is through exceptionally hard rock. The walls are being lined with concrete, applied by air pressure, something new in tunnel building.

One of the largest cuts on the system is near Douglas, Wyoming. Six hundred thousand cubic yards of earth are being taken out. This earth is being used to fill the trestles and widen the roadbed at other points along the line. The main difficulties were in the canyon of the Big Horn. This canyon is 2,000 feet deep, and the rushing stream has been traversed by only a few adventurous boatmen. It was necessary to cut trails and roads through the solid rock, leading into the canyon, before construction work could be done at many points. Some times the contractors had to spend several thousand dollars on such work before they could do any actual railroad building.

Grades have been kept to a minimum on the new line, in spite of the physical difficulties that had to be overcome. There is no grade on the line in excess of 45 feet to the mile. The rails are heavy and the trestles and bridges permanent, thus making it possible to haul the heaviest loads over the new line without any great loss. In fact it is claimed that the new road will have by far the lowest maximum grades of any line from Puget Sound to the Gulf of Mexico. From the new town of Arminto, 6,028 feet above sea-level, the highest point on the Big Horn-Wind River divide, it is claimed that an engine will travel to the Missouri River or to the Gulf by its own weight.

It is figured that the new line will assume increasing importance as Panama Canal trade is extended. Gulf exports, it is thought, cannot fail to cut an increasing figure in the commerce of the nation. It is pointed out that with a "tonnage" line from the Sound to the Gulf, the Burlington will be able to land the products of the



RANCH SCENE IN THE BIG HORN VALLEY, ALONG THE NEW LINE.

Northwest and the livestock and wool of Montana, Wyoming and Colorado at Galveston at very low rates.

In addition to its importance in binding the Puget Sound and Gulf States closer together, the new line is the first to traverse Wyoming from north to south. Wyoming has been retarded in development largely because it has had no north and south line. In order to reach the capitol at Cheyenne, a legislator living in the northwestern part of the State has had to travel in a semi-circle, through the corners of Montana, South Dakota, Nebraska and Colorado.

The Colorado and Southern built to Orin Junction over 20 years ago, but got no farther, owing to financial difficulties. A few years ago James J. Hill acquired that road, no doubt with the idea of linking it with the Burlington. It has taken fourteen years to bring the two roads together. The first work on the new link was begun in 1900 when the Burlington built south from its main line in Montana to Cody, Wyoming. From Frannie, Wyoming, on the Cody branch, the line was pushed down the Big Horn to Basin, Thermopolis and other towns, until Casper and Orin Junction finally were reached this year. The work has been halted many times, but the goal never has been lost sight of.

The new line penetrates a picturesque and interesting country. It will shorten passenger travel by the Burlington's Denver gateway to the coast. It will open one of the greatest health resorts in the country at Thermopolis, where wonderful hot springs have been set aside by the Government. These hot springs are the largest in the West, if not in the world. They were used by the Indians for generations, and were ceded by the Shoshones, whose great chief Washakie insisted that the Government should reserve a mile square, including the largest and finest hot springs, for the use of the people. Thus the public has an Indian chief to thank for this great natural wonder which it is prophesied will in time rival the Hot Springs of Arkansas in popularity among health seekers.

The canyon of the Big Horn is one of the scenic wonders of the West. While its walls are not as precipitous as those of the Royal Gorge, it is brilliantly colored.

At Worland, on the new line, is located the experimental farm of Prof. B. C. Buffum, whose achievements in plant breeding have challenged the attention of scientists all over the world. Prof. Buffum has raised more than seventy varieties of alfalfa on his farm in the Big Horn Valley, besides developing the new forage crop, emmer, which is being extensively planted in the irrigated States.

The new line penetrates the oil fields of Casper. Other oil fields are being opened at various places along the line. The rise of Casper from a wool shipping center to one of the chief oil producing markets of this country is a romance in itself. Oil will be used as fuel on the new line, stations being established at Casper and Greybull.

The building of this new line across Wyoming is the only important railroad development in the West in several years. The line was pushed to completion at a time when railroad construction was almost dormant, testifying to the faith of the Burlington in the future of this Sound-to-Gulf link.

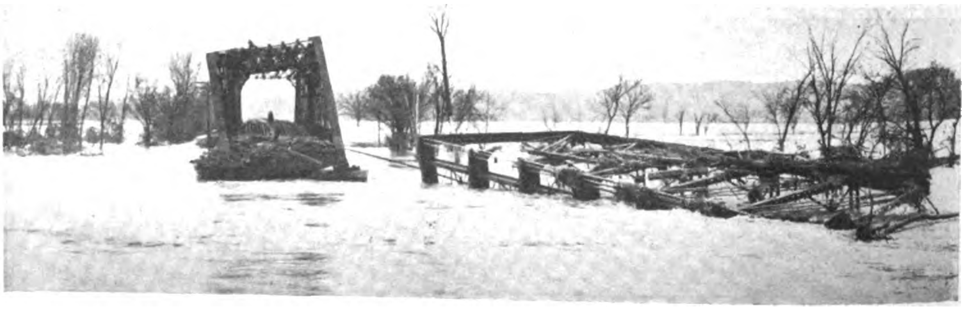
A Remarkable Engineering Feat

ON September 22, 1914, another romantic chapter in the story of the floods of 1913, and how they were met by the Pennsylvania Lines, was completed. On that day a new three-span truss bridge, 720 feet long and weighing 7,000,000 pounds, was "rolled" into place at Tyndall, Ohio, in seven minutes, without interrupting traffic. Eleven minutes after the last train crossed the bridge in its temporary position another moved over it in its permanent place. Between the breaking of the rails and reconnecting them 10 minutes and 17 seconds elapsed.

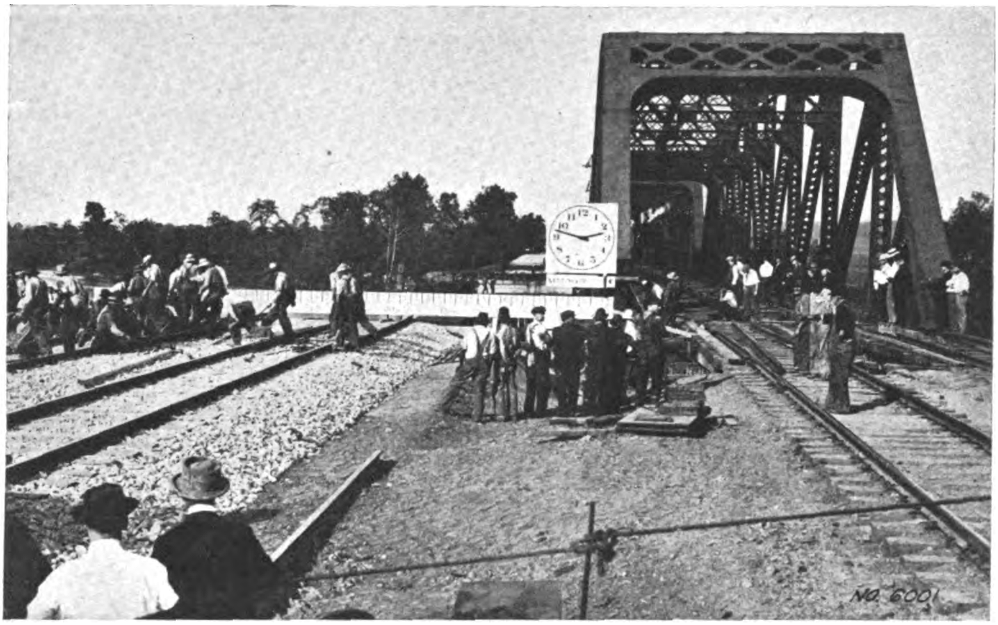
The bridge is the longest and heaviest ever moved into place by the method employed, and the speed with which the great structure was shifted set new records for engineering work of this kind.

The old Bridge 100 crossed the Muskingum River at Tyndall, Ohio, about four and one-half miles west of Coshocton and about 64 miles east of Columbus. It was erected in 1900—a four-truss bridge, resting on three piers and two abutments. From end to end it was some inches over 614 feet long and it weighed 2,500,000 pounds, which would still be ample for the traffic to-day.

The floods of 1913 tore Bridge 100 into pieces.



APPEARANCE OF BRIDGE IMMEDIATELY AFTER FLOOD.



New Bridge Over Temporary Line. Weight 7,000,000 Pounds.

So great was the velocity and so immense the volume of water that scoured out the bed of the Muskingum River and undermined the foundations of the bridge, that the west pier was destroyed and the middle pier was damaged enough to cause it to settle nine feet on the upstream side and five feet on the other. At the height of the flood the water rose to within 1.6 feet of the grade of the rails.

The two trusses at the west end of the bridge fell into the river. The middle east span settled with the middle pier, while the span at the east end of the bridge remained intact. This occurred on March 25, 1913.

Because of many washouts in both directions, as a result of the great flood, it was April 13th before a temporary bridge could be built.

Once traffic was moving again over Bridge 100—moving very slowly, it is true—the railroad engineers devoted themselves to the task of designing a bridge that would defy the force of another flood such as that of March, 1913.

Soundings taken in the Muskingum River, under Bridge 100, after the flood, showed that the bed of the river had been washed out in some places 18 feet below its former level and in other places 15 feet. The area of the waterway beneath the bridge—that is, the space between the bed of the river and the floor of the bridge, through which water could flow—had been 16,328 square feet. With the passing of the flood it was found that this had been increased to 18,990 square feet by the cutting away of the river bottom.

The engineers decided to plan a structure which, in addition to withstanding the floods, would provide extra strength to meet the growth of traffic for many years to come. Hence the new bridge was designed not only to be higher and longer than the old, but also of more than twice as heavy construction.

A greater waterway area was one of the first features decided upon. The flood, itself, had accomplished something in this direction by scouring out the river bed, but the plans for the new structure provided a further increase to 21,672 square feet, to give a larger opening for the free passage of swollen waters. The grade of the rails was raised three feet, and the total length of the bridge, from face to face of the abutments at either end, was increased to 721 feet. The new bridge was planned to be built in three spans, instead of four, so that only two piers would oppose the flow of water, where there had been three under the old structure.

As the river bed was found to consist of sand and gravel to a depth of 100 feet, the engineers provided for pier foundations 43 feet below low water, about 75 feet under the tracks. The foundations for the abutments were carried to a depth of 31 feet below low water.

In laying the new foundations, the workers in the pneumatic caissons found a curious relic of the flood, a little child's wagon in the sand 58 feet below the tracks.

The three 240-foot truss spans which form the superstructure of the new Bridge 100 were erected on temporary, but very strong, supports 45 feet down stream from the location of the old bridge. As soon as the new spans were put together, traffic was diverted to the new bridge in its temporary position. The old repaired structure was then demolished.

The masonry work on the new piers and abutments was finished, except for some details which awaited the moving of the superstructure into place, in December, 1913. The work of putting together the three trusses was started in the same month. All of the material had been delivered by the following March and the spans were complete to the last rivet on September 22d. They were immediately moved to their permanent places.

The three spans were shifted as one structure, with ties and rails in place. So fine was the cal-

New Bridge After Being Moved to Permanent Location. Time of Transfer, Eleven Minutes.

culation that, despite the rapidity of the operation and the great length of the bridge, nothing was disturbed in the slightest degree and the rails on the spans made strikingly perfect alignment with the tracks of the approaches at either end.

The spans were moved from their temporary supports to the adjacent piers and abutments on 2½-inch steel rollers, resting on rows of 85-pound steel rails laid for that purpose. Each span was carried on "sand jacks," small steel boxes filled with fine dry sand. The purpose of the "sand jacks" was to hold the spans, during the rolling operation, somewhat higher than their final positions, so that, when the bridge was in place, the sand could be allowed to run out and the trusses would settle gently into their permanent "shoes."

The motive power was supplied by two derrick cars, equipped with hoisting engines. The cars were placed end to end on the middle span, and anchored. From each of the four drums of the hoisting engines steel wire cables were led through a series of many-sheaved steel blocks, attached to various points on the spans and to wooden "deadmen" built at the upstream ends of the new piers and abutments. In effect, the spans and their permanent foundations were pulled together, but, of course, only the spans moved.

Owing to the very careful arrangements, the power required to roll the heavy spans was surprisingly small. The greatest pull on any one of the three trusses was calculated at not over 15,000 pounds, although the entire structure, with rails, equipment, and the moving machinery, weighed more than 7,000,000 pounds. The steel cables were not even pulled taut.

An ingenious "telltale" arrangement, constructed on piano wire, pulleys, weights and a scale graduated in feet and inches, in plain sight of the person directing operations, guarded against one span moving faster than another, which would disturb the alignment.

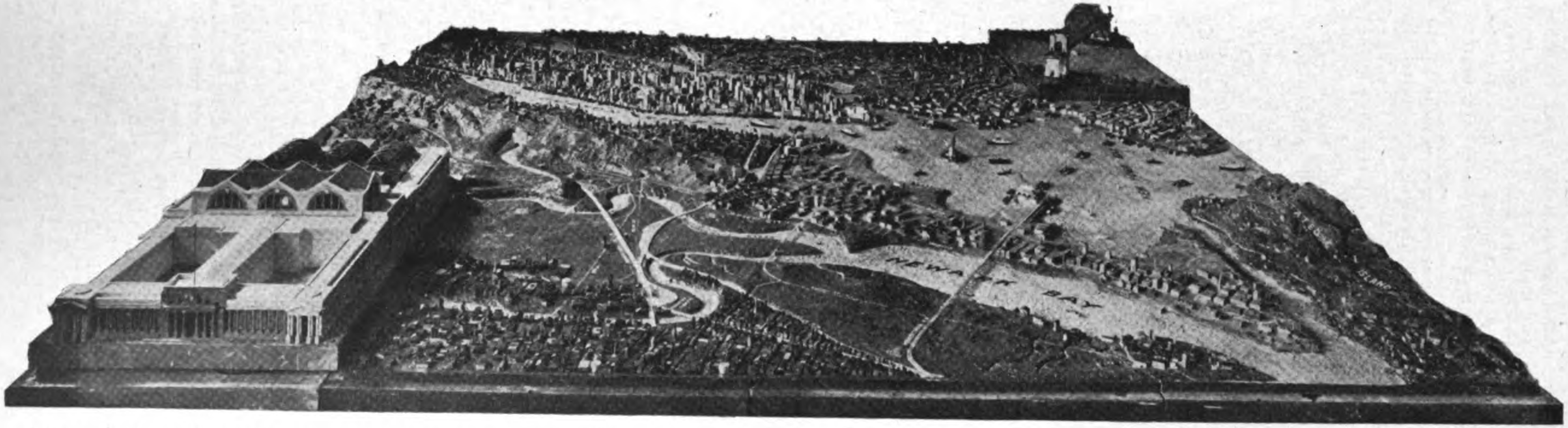
A huge clock was erected at the west end of the bridge, over a scale, with a pointer, showing the number of feet the structure had to be moved. This not only graphically illustrated the progress of the work, but rendered possible photographic records of the various stages of the operation.

The last train to cross the bridge in its temporary position was a fast westbound mail. As soon as it cleared the bridge, the tracks were broken and within two minutes the bridge began to move. The actual rolling required between six and three-quarters and seven minutes. The time during which the tracks were disconnected, 10 minutes and 17 seconds, was half what had been counted upon.

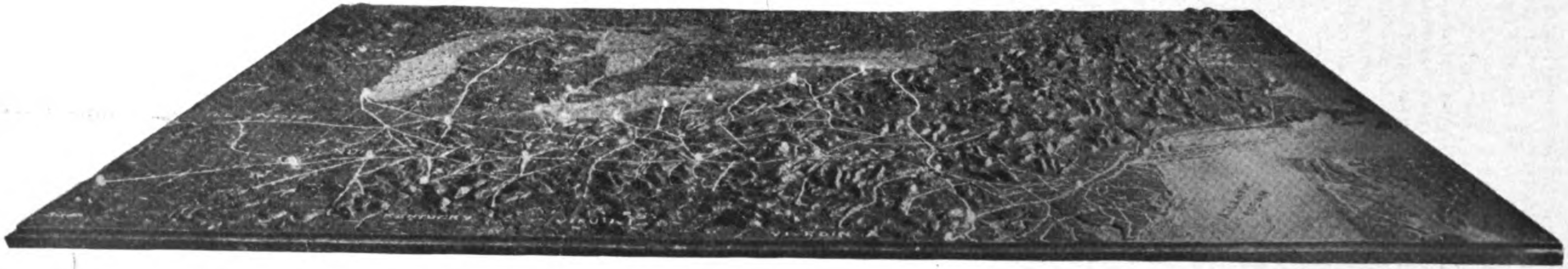
So swiftly and smoothly did the great bridge glide into its permanent place that the several thousand persons who had come from miles around to witness a rare engineering feat, for a moment hardly realized that the work was done.

The Pennsylvania System Exhibit at the Panama Pacific Exhibition

THE Pennsylvania System exhibit at Chicago was historical; at St. Louis, scientific, at the Panama-Pacific International Exposition, 1915, the exhibit will be practical and popular and will serve to bring before the eyes of the thousands of people who will help celebrate the opening of the Panama Canal a true educational picture of density of population, traffic and industry served by the Pennsylvania System. The exhibit will consist of models of New York City



Model of New York City and its Surroundings to be Exhibited by the Pennsylvania Railroad at the Panama-Pacific International Exposition. This Model is 26 feet Square and is a Faithful Reproduction of the Nation's Greatest City Including its Wonderful Harbor and Surrounding Territory. On Diagonal Corners are Shown Reproductions of the Pennsylvania Station in New York City and the Hell Gate Bridge.



Relief Map of the Pennsylvania System to be Exhibited at the Panama-Pacific International Exposition. This Map is 42 x 26 feet and Took Two Engineers Three Months to Lay Out the Proper Drawing Showing the Entire System, Cities, Mountains and Lakes. This Drawing was Used as the Basis for the Construction of the Relief Map Which Required the Services of Cabinet Makers, Modelers, Painters, etc., Working for a Number of Months Under the General Directions of Henry Kabierske of Philadelphia.

and surroundings, with the Pennsylvania Station in the heart of Manhattan Island; of the Pennsylvania System from the Mississippi River to the Atlantic Ocean and from Duluth to Norfolk; and two railroad stations, the Union Station at Washington and the proposed Union Station at Chicago. A unique motion picture auditorium of two Pennsylvania all-steel passenger coaches will also be on exhibit wherein will be projected various journeys from the Western gateways of the Pennsylvania System to New York.

Henry Kabierske, of Philadelphia, who has contributed his advice and services in connection with the St. Louis Exposition, the Nashville, Tennessee, Exposition as well as the construction of floats for the Founders' Week Pageant at Philadelphia in 1907, constructed the models, assisted by cabinet makers, modelers, painters, electricians and various other artisans, and after a year's work there has been completed a piece of work which is considered by many as a masterpiece of its kind. In fact, the map of the Pennsylvania System, with hills and valleys, with rivers, bays and lakes is without question the largest ever constructed, it being 42 x 26 feet.

The model of New York City is twenty-six feet square. One can gaze upon this gigantic city and its beautiful harbor, the gateway of American commerce, as if from an aeroplane. The prominent skyscrapers are faithfully reproduced. The East River bridges are reproduced to an exact likeness, while all transportation lines in and around the city are shown along with the Pennsylvania Railroad's entrance to New York and the extension to Long Island.

The floating craft in and around the harbor are reproduced as is that monument which first strikes the eye of the foreigner before stepping on America's shores, the Statue of Liberty, and as shown on the model, carries in the hand as a torch the smallest electric light ever used, while the principal buildings in New York are so arranged electrically that the metropolis can be represented at night as well as by day.

The model is worked out to minute detail in dimensions and colors. All the prominent buildings were made from architect's drawings, while all the elevations, palisades, bridges, river and bay levels were arranged after the proper plans of the Government and approved by the engineers of the Pennsylvania Railroad. The model shows on the Jersey side the City of Newark, Manhattan Transfer and the Bergen Hill tunnels. Across from these is seen the magnificent Pennsylvania Station in the heart of the New York City. Across from this station, over East River, The Sunnyside Yard is shown, one of the most complete railroad passenger yards in the world.

At diagonal corners are shown reproductions of the Pennsylvania Station in New York City and Hell Gate Bridge. The latter is being built by the Pennsylvania and the New Haven Railroads for a through service from the West to Boston and New England. The main span of the bridge is 1,000 feet and is 240 feet above the water level. It is a four-track railroad bridge, the construction material being concrete, stone and structural steel.

One gets a good idea of the magnitude of the Pennsylvania System in viewing the relief map. It is to the approximate scale of two miles to the inch and shows important stations touched by the railroad, the System being shown by a line in silver leaf. The main cities are indicated by electric globes bearing the name of the respective city and its population. Capitals of the varous States and important historical places are marked by flags.

It took two engineers three months to lay out the proper drawing showing the entire system, cities, mountains and lakes. All this was executed to scale, from the Government's geographic maps, to the smallest detail possible. Miniature steamships represent the Pennsylvania System Great Lakes steamship line, known as the Anchor Line.

One can form a good idea of the exhibit by the fact that it required over 200 packing crates and boxes for transportation. The model of New York City being made up of twelve sections while the map of the Pennsylvania System is composed of twenty sections.

Models will be shown of the Washington and Chicago stations. The former, electrically illuminated, shows the station classic forms. The lanterns in front of the building shine brightly while the two fountains before the edifice will also be put into action by electric motors. The Chicago station, not yet constructed, will be depicted to the San Francisco people for the first time, the model itself being designed to represent one of the most beautiful edifices in the world.

The two Pennsylvania all-steel passenger coaches which will be used as a motion picture theater, have been constructed at the Altoona shops. They are to be of the highest type at an approximate cost of $13,000 each. At the present time the Pennsylvania System has in use about 3,000 of these all-steel passenger coaches and nearly 400 under construction, the Pennsylvania on January 1, 1914, owning more than one third of all the steel passenger equipment cars in use in the United States. It is the intention to place these coaches, at the close of the Exposition in regular service on the Pennsylvania System. It may also be mentioned that the first motion pictures ever shown to the public were within a railroad passenger coach.

The two cars will be joined under one roof and the arrangements of the theater will give the patrons the feeling that they are riding in Pennsylvania standard equipment for they will see railroad scenes and railroad activities, just as if they were making a trip over the System. As the pictures are shown on a screen, the lecturer will deliver the story.

The patrons of the theater will be provided with a ticket of admission without cost with a detachable souvenir coupon.

The exhibit in its entirety will be a practical description of the Pennsylvania System, showing every characteristic of the road from an educational standpoint. It will be under the direction of Mr. George D. Dixon, vice-president in charge of traffic, Pennsylvania Lines East of Pittsburgh, and Mr. D. T. McCabe, vice-president in charge of traffic, Pennsylvania Lines West of Pittsburgh. Mr. H. T. Wilkins, special agent, traffic department, has had direct supervision of the preparation of the exhibit and he will also supervise its installation and display. Mr. Wilkins will be assisted by courteous attendants, uniformed as trainmen, who will look after visitors and distribute an illustrated booklet describing the exhibit.

Make Your Times Better—Now.

(From the "Railway Employes' Journal," Official Organ of the National Brotherhood of all Railway Employes.)

ONE of you—Frederick D. Underwood, who began with a brakeman's job on the Chicago, Milwaukee & St. Paul and now holds the president's job on the Erie—put it good and straight in a letter written lately to another of you, Engineer John Wonderly, saying:

"Too many railroad men are following the wrong wagon—their true friend is the thing that gives them the money—their livelihood. It is said that all things finally work out for good; perhaps the assaults of the rabble on railways will solidify the men and the company. I hope this will be the case."

"Most railroad men," this one of you might have written, "are not following any wagon—are doing nothing to keep the wreckers from putting their own wagon into the ditch."

But just as public opinion has waked up, so have you. And you can make public opinion get up and do something for your industry and for you.

Two millions of you in the United States. Why, public opinion has simply got to get up and get busy when you say so, because you are yourselves a big, strong part of public opinion. On any railroad question you hold the balance of power—you can be public opinion.

Whenever you say the word this business of railroad jamming will get out of the way and let your business go ahead.

You are getting ready to say the word. Your response to the talks in this Journal shows that—your ready response to the plain talk of working railroad men to working railroad men.

Don't let anybody lull you to sleep again in the notion that your industry is getting along all right—that there never was anything the matter with it except the crookedness of some railroad financiers and the greed of some others.

There's a railroad crisis on right now, worse than any your industry ever met or feared. European war did not make this cause, but only sharpened it.

Twenty-five years of demagogism made this crisis—twenty-five years of political and professional "regulation," of restriction, of increasing taxes, of decreasing revenue—twenty-five years of unending, unscrupulous campaigning by the government ownershippers, who would make a tumble-down wreck of your industry and liveried flunkies of you!

President Wilson has confidence that public opinion will compel justice to be done your industry. So it will—by and by.

Justice will be done now to your industry—"the one common interest of our whole industrial life"—if you, brother railroad men, demand it for your own sake—not otherwise.

It will always be "by and by" for your industry and for you, brothers, until you make it "now and now."

The Patriotism Displayed by British Railway Employes.— Reports from abroad indicate that practically ten per cent of all railway employes in England, Ireland and Scotland had joined the colors by the middle of October. With only British returns available, 54,276 railroad men on twenty-four roads had left to enter either the army or navy. The total number of employes in all English roads just previous to the war, was 643,135.

A similar proportion of railway employes entering military service in the United States in time of war would afford an army of 200,000 men. On the London & Northwestern alone 9,400 men have left, while the Great Western is second with 7,600, the Midland third with 6,700 and the North Eastern next with 5,000.

To preserve adequate operation of the railways it has been necessary for the war office to issue an order to all recruiting officers "that no railwayman is to be allowed to enlist unless he presents a written statement from the railway company which employs him to the effect that he has approached the head of his department and has obtained the necessary permission to enlist." The companies have given notice that "wherever it is possible to do so without impairing the efficiency of the working of the railway, permission to enlist will be given, but . . that any man who is required for the working of the railway is serving his country just as well by remaining at his post as he would be if he enlisted with the forces."

From the employes of British railways, special corps of railway troops have been recruited to assist in restoring and maintaining rail communications in France with the allied armies at the front. These consist of maintenance men, linemen, telegraphers and others similar, while two companies consist of engine drivers, signal men, guards and switchmen, to assist a body of 15,000 French railway men already organized for railway work of a military nature.

Similarly, according to advices to the Bureau from Berlin, 5,000 men from the Prussian-Hessian state railways alone had been sent by early September to operate railways in occupied Belgian territory.

"If it is not granted to these men," says an appeal to German railway men, "to strike down the enemy by weapons in the hand, still they are called to a great work. The farther our valiant army presses forward triumphantly into the hostile land, the harder becomes maintenance of communications with home. What a work they must do! Conveyance of troops, supplies, munitions, hospital trains, in addition to the numberless trainloads of prisoners!

"Our men of the winged wheel must do their utmost, that railway operation in the hostile territory may fit to the smallest detail. They are called like pioneers of Germanism, to work in the conquered realms, and to bring to the heated population a conception of German discipline, customs and order!"

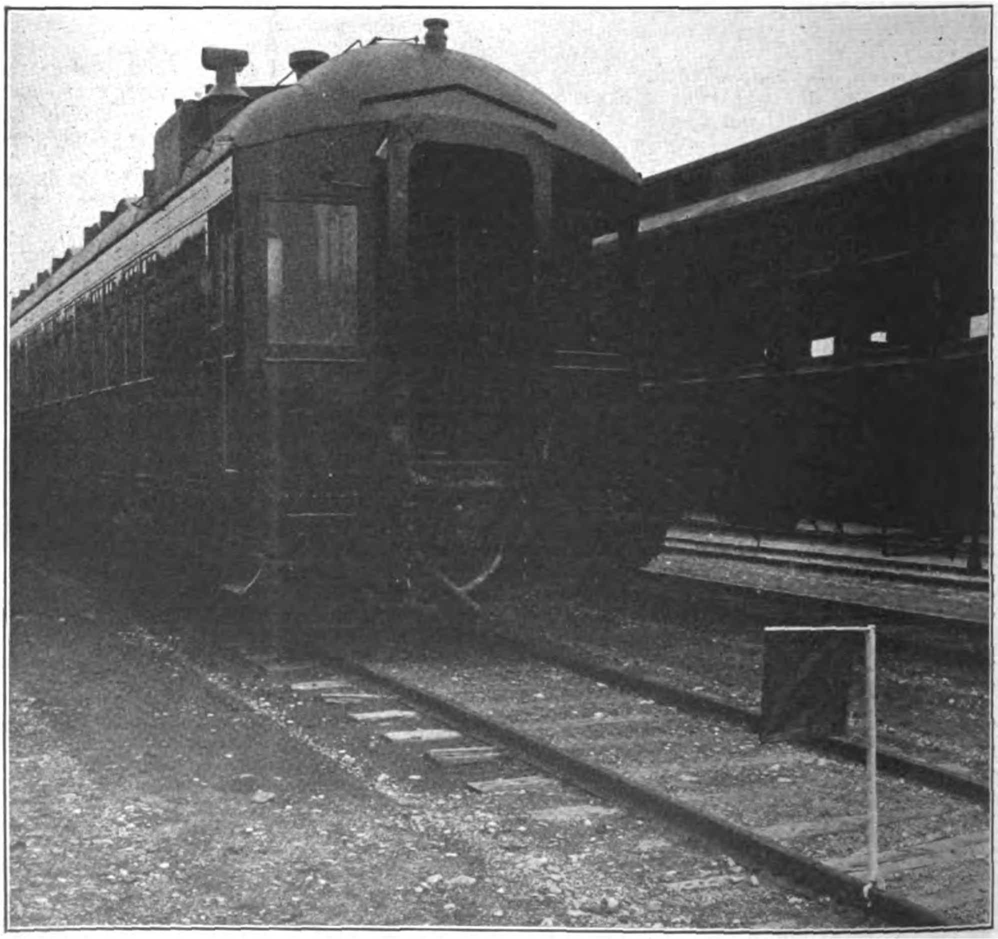
"Writers have alluded to this war," says an English commentator, "as a 'motor car war' and a 'petrol war.' It would be as accurate to call it a 'railway war,' since both forms of transportation are playing an enormously important part . . . aside from the importance in mobilization. The press censorship has prevented much from becoming known. . . The strategy of the German-Russian campaign has been modified by the general layout of the railways in the coastal districts concerned. A recent article by a German military expert pointed out how the French railways, particularly the fact that the lines from Paris to the North were so numerous, enabled the allied army in France to move its troops very rapidly."

The Blue Flag Holder of the Canadian Pacific

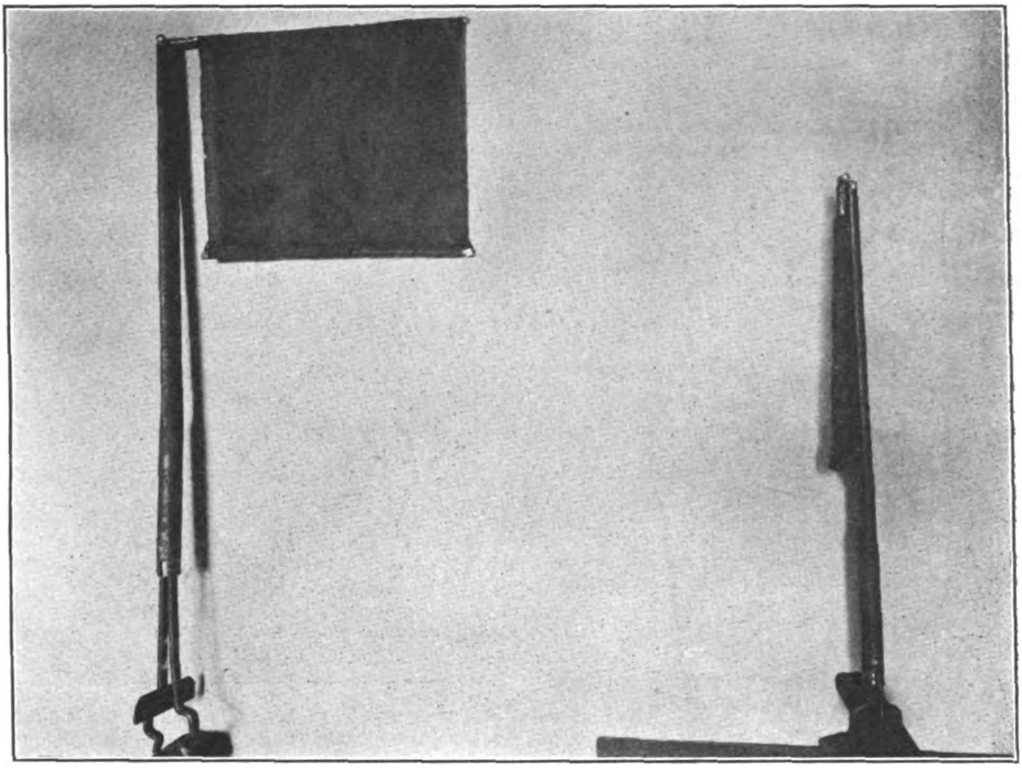
THE Canadian Pacific Car Department is using a blue flag holder that appears to meet all requirements. The illustrations show the appearance and general construction. The sizes of materials used are as follows: Spring clamp for gripping rail head is made of one piece of ⅝ in. half round, the foot piece used for forcing the clamp over the rail is 1½x⅛x4½ ins., the mast is made of 1¼ ins. O. D. seamless tubing 1-16 in. thick, 32 ins. long. This is cylindrical for a distance of 9 ins. from the lower end and above this point one side is pressed in so that the cross section is crescent shape, thus forming a recess that permits the flag when wrapped around the cross bar to be folded so that it is very compact and convenient to carry. The flag is secured to the cross bar by means of a light strip of metal and four small stove bolts and the lower edge of the flag is weighted with a piece of steel bar, thus ensuring the full area always being in view regardless of wind conditions. This is an important feature as the ordinary flag attached to a perpendicular mast hangs limp when the wind is not blowing and if attached to a stick that is horizontal, the flag may not be very conspicuous if the wind is blowing strongly from the direction of the observer.

At night it is equally as useful as in the day time, the only change required being to wrap the flag around the cross bar and hang a lantern over the bar, the folds of the flag serving to prevent lantern from creeping off.

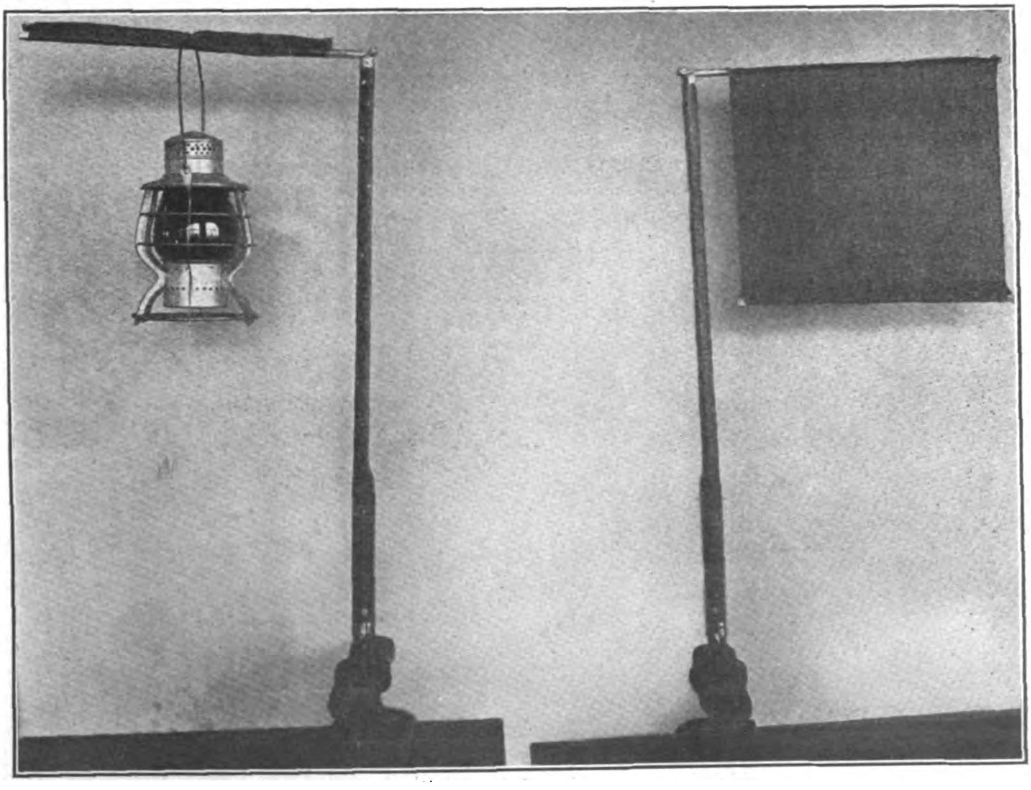
One of the most important advantages of this arrangement is the fact that makes possible the inforcement of rules requiring that flag be located a specified distance away from the car that it is protecting. This is important, as flags displayed against a dark object, like a car painted black, are not as conspicuous as they would be if placed some distance in front of same.



THIS ILLUSTRATION SHOWS HOW THE CANADIAN PACIFIC EMPLOYS BLUE FLAG ON RAIL IN FRONT OF COACH. THIS CAR IS NOT UNDERGOING REPAIRS.



Two Views of Blue Flag Holder Showing Spring Clamp Withdrawn from Mast and Holder in Position Ready to Carry.

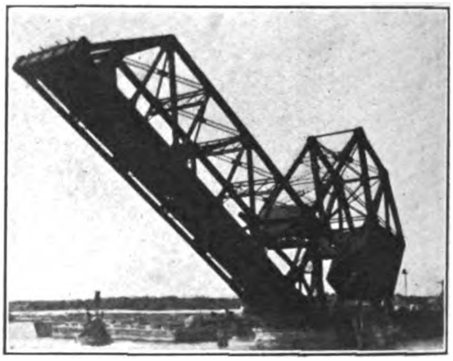


The Night and Day Arrangements for the Employment of the Blue Flag Holder.

The Cape Cod Canal

NOTE: The following paragraphs are taken from an address delivered by Captain J. W. Miller, vice-president of the Cape Cod Construction Company, before the New England Railroad Club, on October 13, 1914. As recorded in the RAILWAY WORLD for June, this canal was finally cut through on April 21st, but was not ready for actual service for some weeks later. The canal, which is eight miles in length reduces the water journey from New York to Boston from 326 miles via Pollock Rip to 260 miles via the canal through Long Island Sound. The distance from New York to Boston via Nantucket Light, is 402 miles. It will thus be seen that the economy in distance is very marked. At the present time, only vessels of light draught are operating through the canal, as it has not as yet, been dredged to its full depth. When completed it will accommodate the largest vessels engaged in coastwise trade.

ELEVEN million tons of coal are to-day coming around Cape Cod, and thousands of tons of lumber from Maine and the Carolinas. The Erie Canal will be open next year, and the ore of Duluth must float through that channel, up Long Island Soumd, and through an interior waterway at Cape Cod. What the railroads may lose through the lack of crude material from the West, they will gain by the greater activity of their local industries. What is true of the argument for water transportation between the West and the East is equally evident between the North and South, if an interior channel can be constructed back of the coast as far as Florida. There is not enough money even in our rich Governmental treasury to pay for the excessive cost of canals back of Hatteras. If the Cape Cod Canal can be proved to be a financial success, with fair rates, the others will be built by business men, and the whole chain be one of successive links between here and Panama, and thence toward South America—the entire system accomplished by the same type of New England men which successfully created a coast marine commerce and then made a network of land transportation through the country. The time has come, now that the West as well as the East has a congested population and traffic, to look over sea; the moment has arrived for co-operation between land and sea transportation.



TWENTY-TWO TON LIFT BRIDGE PARTLY OPEN. ONE MINUTE REQUIRED TO LIFT.

EASTERN END OF CANAL, SHOWING 3,000 FEET BREAKWATER CONTAINING 400,000 TONS OF GRANITE.

THREE MILES OF COMPLETED SECTION OF CANAL, LOOKING EAST FROM BOURNDALE, MASS.

BUZZARDS BAY, MASS.

JOINING THE WATERS OF BUZZARDS BAY AND MASSACHUSETTS BAY THROUGH CAPE COD CANAL, APRIL 21, 1914.

August Belmont, President of the Company and William B. Parsons, Chief Engineer are the Central Figures About to Shake Hands. Captain Miller is third from Left, Holding Spade.

The general public does not appreciate the magnitude of tonnage and of passenger traffic—the latter increasing yearly as the sons of Massachusetts living in the West seek the East during the summer months. I doubt if many of our legislators understand, as an example, that the yearly tonnage around Cape Cod is as great as that which goes through the Suez Canal, and nearly twice what the Government expects at Panama. Twenty-five millions of tons pass through Vinyard Sound per annum, whereas not over fifteen millions will go through the Isthmian Canal. The eleven million tons of coal, and the large lumber. iron, ice and plaster traffic, are daily subject to the storms and fog off Pollock Rip. With the canal finished, they will pass through a region of fifty per cent less fog, save seventy miles and be free from the southwestern gales and the shifting sands of the present route.

Mr. Belmont and his associates have taken all the risk in building the new eight-mile channel. They are convinced that it will pay, as any one who understands the subject can see when it is said that the Cape Cod Canal will cost only twelve million dollars, and that economy as well as humanity demand the safer and shorter route which for nearly three hundred years has been advocated by Massachusetts men, and by Government officers as a military necessity. You railroad men also know what a help water transportation has been on the Great Lakes to the railways.

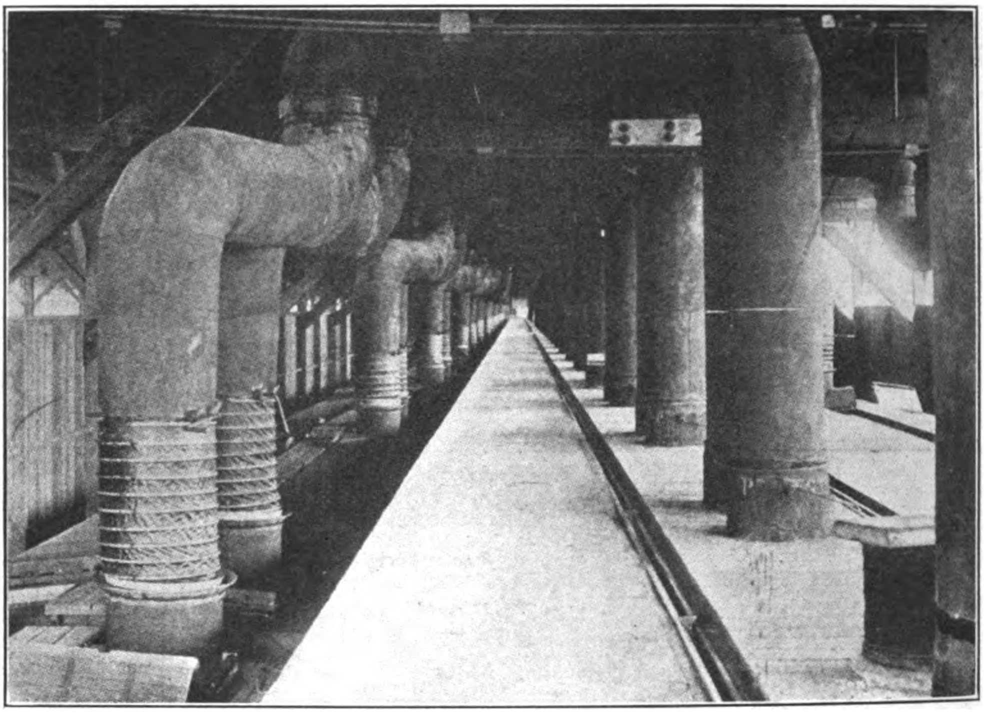
The canal is to-day completed to its full depth of twenty-five feet at low water, except for about three-quarters of a mile, and in that three-fourths of a mile there is twenty feet. Engineers will understand that whatever current may exist there at present will be considerably diminished when an even depth exists.

Some criticism has been made regarding the present rates. They are tentative, and you transportation men will realize that it is easier to change them in the future than to start with a low rate and maintain a higher one afterwards. We fully realize the fact that we have competition through the preesnt Cape Cod route, and that, after experience and consultation with our future patrons, it is our intention to be perfectly fair both to the public and to the controlling fact that there should be a just receipt on the money expended in constructing this great aid to navigation.

The California Pre-Cooling Plant of the Santa Fee System

NOTE: The following extracts are taken from an article which appeared in a recent issue of the *Santa Fe Magazine*. They show the unmistakable economy procured through the pre-cooling of citrus fruits for shipment from Pacific Coast territory to Eastern markets. The advantages outlined, are so pronounced as to make the system described of interest to other railroads having problems of a similar character to contend with.

THE element of time involved in the operation of pre-cooling being one of prime importance in accelerating the movement and availability of refrigerator cars and equipment, furnishes a factor that fits exactly with the requirements of quick and efficient arrest of deterioration and decay in the fruit or other perishable products handled. The concrete advantages of pre-cooling may be summarized as follows: Quick reduction of temperature to a safe point for transportation purposes; elimination of decay and deterioration; reduction of the number of stops and switches for re-icing in transit; shortening of time schedules between producer and market;



Twenty-two-inch Air Pipes, Connected to Bunkers of String of Refrigerator Cars, Whose Tops Are Seen to Lower Left.

avoidance of rehandling to and from storage, and extension of the market by the lengthened radius of safe shipment.

Granting the desirability, from the standpoint of both shipper and carrier, of securing these advantages above enumerated, we are brought to the consideration of adequate pre-cooling equipment, its cost and efficiency.

The combined ice-making and pre-cooling plant of the Santa Fe is located in the center of the citrus fruit district, at San Bernardino, Cal., and has been in continuous operation since its erection in 1910. "Pick-up" trains are operated throughout the entire San Bernardino Valley, are taken to the pre-cooling station as fast as loaded, and, after a delay of about four hours, proceed to their Eastern destinations, only occasional subsequent icing being needed en route. The plant was designed and constructed under the direct supervision of C. M. Gay, of Los Angeles, and the pre-cooling department was constructed under his patents, with the advantages of careful engineering tests and data derived from his operation of the Santa Fe experimental station, where only one car at a time was treated. The early experiments conducted by Mr. Gay proved conclusively many engineering facts in regard to the condition of refrigerator cars and equipment, upon which were based inventions and devices peculiar to the system finally adopted.

One fact stood out prominently—that all refrigerator cars were far from being air tight. Upon testing the cars after closing them as tightly as possible with an air pressure equivalent to half an inch, water gauge, they showed a loss of air from unseen openings of from eight hundred to two thousand feet per minute, and an equivalent vacuum within the car produced practically the esame result in the amount of air drawn in from the outside. Consequently, in order to perform the function of pre-cooling in an efficient manner and without great loss of refrigerating capacity, it was highly necessary that exactly as much air be withdrawn from the car as was being forced into it in the process of cold air circulation, and that the air circulating system must be so balanced that the point of equalization between the pressure coming from the main pressure air ducts and the suction established in the main return ducts should occur as nearly as possible in the center of the car. This preliminary explanation is given in order to afford a better understanding of the following description and the illustrations accompanying it.

The main building, comprising the power plant, tankroom, day storage and winter storage, is 511 feet 6 inches long by 132 feet wide. Connected to the winter storage, the pre-cooler chamber and the icing dock extend for a distance of 737 feet 6 inches, the icing dock proper being 693 feet long. This gives a full length of 1,249 feet for the plant, or approximately one-fourth of a mile. The structure is entirely of reinforced concrete, with interior partitions and tunnels of the same material. The building may be considered as divided into two portions, one devoted to ice manufacture, the other to pre-cooling. A reinforced concrete reservoir has been built, partially underground, thirty feet away from the powerhouse end. It is eighty feet square by ten feet deep and is used in connection with an ammonia condensing system of the two-coil double-pipe type, which is placed over the front section of the basin coincident with the plant. Adjoining this a pumphouse has been erected supplying water for the ammonia condensing system, consisting of two circulating pumps (one steam and the other electrically driven). There is a transformer station on a line with the pumphouse, and a crude oil tank, 20 by 30 by 10 feet, has been constructed similar to the water reservoir and parallel to the boiler-room.

Water for the system, including ice manufacture, is obtained from an artesian well, which is connected to the reservoir by a fourteen-inch steel pipe line. This is at the surface of the ground at the well end, and enters a measuring weir at the basin end, and enters four inches below the edge of the reservoir, giving a gradient of but one per cent. The flow from this well furnishes a supply of 500 gallons a minute, the normal flow being increased to this extent by an air lift, for which purpose a four-inch air line is placed in the same trench with the water line. The air compressors for this system are located in the boiler-room.

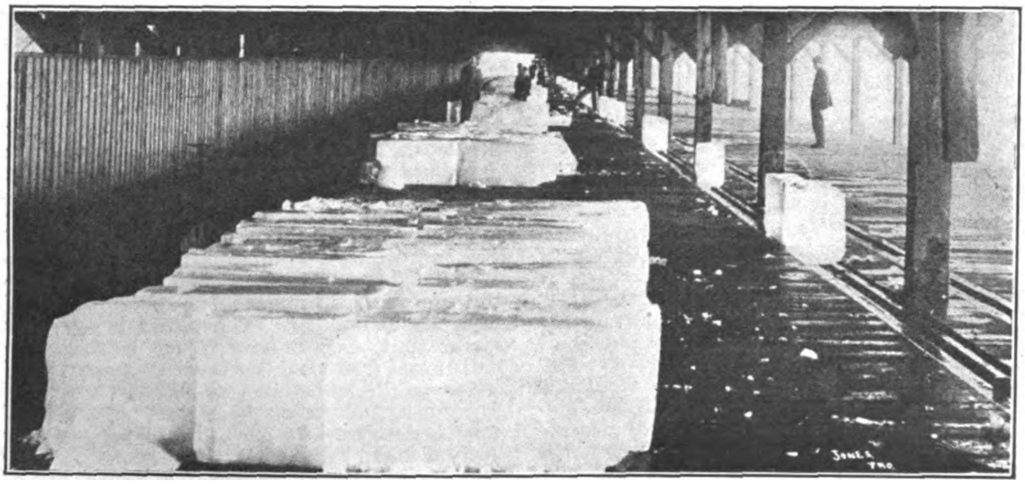
The ice manufacturing plant installation comprises three 350-horsepower Sterling boilers, set two in a battery and one single. These furnish steam to two 24 by 24-inch cross-compound Vilter Corliss engines, each direct connected to one 300-ton, 17 by 34-inch duplex, double-acting Vilter refrigerating machine. Adjacent to the engine room is a 36 by 24-foot fore-cooler tank, filters and ammonia receivers, the latter being placed under the filtering apparatus. The tank chamber is 116 feet 6 inches long, and extends across the full width of the building, being 21 feet high in the ceiling, with the floor line below grade the distance noted. The floor is of concrete, covered with two-inch corkboard over which there is a finish of 1½ inches of asphalt. Three 75-ton ice-making tanks are here installed, giving a total capacity of 225 tons. The cans used are of the regulation size, 11 by 22 by 44 inches, forming 300-pound blocks, and are handled three at a time by electrically driven traveling cranes. One 300-ton refrigerating tank is used for the pre-cooling system and is equipped with a Vilter flooded ammonia system of brine coils, with an accumulator.

The day storage-room is supplied with five Stevenson recording double ice chutes, a Stevenson refrigerator door, and the usual storage plant auxiliaries. It has a daily capacity of 900 tons of ice, when blocks of 300 pounds each are placed on end in one tier. The winter storage is divided into four compartments by six-inch concrete partitions, giving a storage capacity of about 7,000 tons for each section. Each room in the winter storage is provided with an endless chain ice elevator for storing, and has an iron ladder for access. Adjacent to the wall separating the tank-room and the day storage, and below the floor of the latter is a 49 by 33 by 11-foot brine chamber which is shown in an accompanying drawing. This compartment contains a 200-ton two-coil double-pipe brine cooler and three electrically driven circulating pumps. The latter are interchangeable, two being used for the storage plant or two for the pre-cooling system as the conditions necessitate; by this arrangement it was possible to omit a fourth pumping unit.

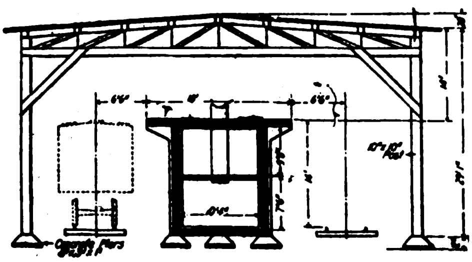
A concrete tunnel eight feet wide leading from this cooling chamber extends through both storage rooms. At the end of the winter storage the tunnel becomes a double-deck structure, the added section being of like size and construction as the lower duct. This lower tunnel is used for the brine mains to the winter storage, and to the pre-cooler coil chamber; the upper portion gives access to the winter storage and carries an endless-chain ice conveyor which leads from and through the day storage. The entire storage plant, including the brine chamber, is insulated with 1½-inch double Nonpareil corkboard, with an asphalt finish of 1½ inches thick on the floors. The roof is insulated with Linofelt and air spaces. Neither room has any outside opening, all ice being handled through the day chamber and the central tunnel in the winter storage-room.

Connected by concrete tunnels, the pre-cooler coil chamber adjoins the winter storage. It is 44 feet 6 inches long by 48 feet wide and is insulated with 3-inch corkboard. The installation consists of a brine coil of 2-inch galvanized pipe, supported by 4-inch channel uprights and small angle brackets riveted thereto. Eight double-inlet Cirocco fans, each about 10 feet in diameter, are arranged in two banks of four each. A set of four fans, two upper and two lower one each side, is driven by an 85-horsepower motor. One bank is used for blowing, while the other is for exhausting, each function being capable of execution by either set without reversing the direction of rotation. A horizontal concrete baffle, literally a floor, is placed between the two banks.

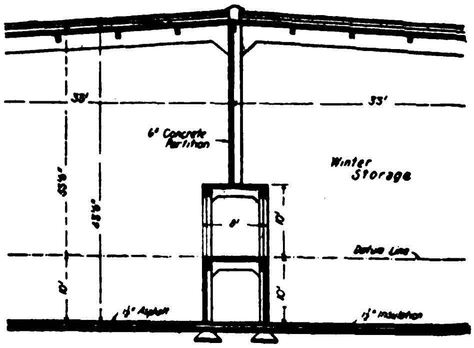
Leading from the pre-cooler chamber, two longitudinal concrete tunnels or air ducts extend to



Top View of Car Icing Dock.



SECTION THROUGH PRECOOLER AIR DUCT



SECTION THROUGH WINTER STORAGE

form the main support of the car-icing dock. These are 7 feet 6 inches and 9 feet 6 inches high, respectively, and 10 feet 4 inches wide; both are of the same length, continuing the full length (93 feet) of the icing dock. The lower tunnel is the pressure duct, and the upper the vacuum duct, both being internally insulated with 3-inch corkboard. Refrigerating coils of 1¼-inch galvanized iron brine pipe are arranged on both sides of either duct, a total length of about 50,000 feet being required. Connecting to these sections by liquid sealed revolving joints, No. 18 galvanized iron pipes 22 inches internal diameter serve as laterals to couple the system to the refrigerator cars.

Purchasing electric current at high voltage from a central station, and stepping down to a voltage suitable for operation, the electric system offers no particular departure from ordinary practice; that is, the electrical energy is obtained at 10,000 volts and reduced to 440 volts for motor operation, and again to 110 volts for a three-wire lighting system. The alternation of steam driven and electrically driven auxiliary machinery, as previously indicated, permits of a continuance of operation should trouble occur at the central station.

The plant has a maximum pre-cooling capacity of 32 cars, 16 on either side of the icing dock, in every four hours, or approximately 150 cars every 24 hours. The brine is taken from the 300-ton brine tank, by the circulating pumps in the brine chamber beneath the day storage, sent through its refrigerating circuit and returned to be cooled by the brine coils in the same compartment. By this refrigeration of the main ducts the circulating air is kept in a similar state throughout its entire movement except when passing through the lateral connections to and from the cars. A large automatic equalizing valve connecting the pressure and vacuum ducts is placed near the terminals of the tunnels. By regulation of this valve the pressure of the air delivered to the cars and the suction at which it is withdrawn are positively governed. The opening of this valve forms a by-pass whenever the differential pressure becomes excessive, thus permitting the air to circulate through the main ducts and main cooling chamber even when no connections are made for pre-cooling.

An automatic intake is located at the extreme outer end of the vacuum or low pressure duct for the replacement of air which may be lost from the system by blowing the warm air from the cars. This is regulated to open when the vacuum falls below the differential pressure at which the equalizing valve is adjusted. The fresh air so taken into the system travels the full length of the suction duct, through the pre-cooler coil chamber, and is then delivered to the high pressure duct to be distributed through the cars. This insures the proper cooling of all air brought into the system from outside sources during the operation.

Referring to the fan installation, the upper bank is used for exhaust from the low pressure duct, delivering the air to the pre-cooler coil chamber and thence over the brine coils. The other set draws the air from the coil chamber and discharges into the lower or main pressure duct for circulation through the system. The total air so handled is about 260,000 cubic feet per minute. The lower duct is held at a pressure corresponding to from one- half to three-quarters of an inch of water above atmosphere, and the upper at a vacuum of one-half to three-quarters of an inch of water. Accordingly the air is supplied to the former at a temperature of from 8 to 10 degrees, and is returned through the latter at a temperature varying from 20 to 24 degrees.

The fundamental principle of the Gay system is to secure a balanced circuit with the pressure above atmosphere in the pressure duct, practically equivalent at all times to the vacuum below atmosphere in the return on the suction duct. By this method a balanced differential air pressure directly at the ducts is obtained without the overcoming of any frictional resistance in the coil chamber. The point of equalization of the air current is thus rendered practically in the center of the refrigerator car whenever such connections may be made. Tests at the plant show that the differential pressures are so equally balanced during pre-cooling as to allow the opening of the refrigerator doors, in the center of each side of the car, without any apparent loss of air to the outside, or the bringing in of any warm air, although a current of from 6,000 to 8,000 cubic feet per minute of cold air is passing through the cars.

Valves fitted to each lateral pipe, opening into both the pressure and the vacuum ducts as noted, secure the effect of cross connection and reversal of current, without any interchange of the laterals. By employing the liquid-sealed revolving joints, universal horizontal adjustment is obtained for connecting the laterals to the refrigerator car openings. In this manner the union can be made to an entire train without uncoupling or spotting of cars and regardless of their various lengths. The closing connection between the lateral air pipes and the cars is accomplished by a bellows spring and scissors-lever joint, comprised of leather and iron rings, operated by a crank. This preserves the entire area of the pipe under any adjustment and makes the connection airtight almost instantly. The pipes themselves are absolutely airtight, being externally insulated with two layers of three-quarter-inch felt suitably covered. By means of the universal joints they swing free of the car track when disconnected. No telescope connections are employed in this system and no internal valves, the valves used being visible for constant inspection.

In practice the cars are connected as shown. A funnel is placed over the bunker opening and the pressure air duct is first connected to the car for about twenty seconds. The cold air rushing in quickly displaces the warm air and vapors which are allowed to escape through the ice-bunker trap door at the opposite end. The lateral from the suction duct is then joined to the ice-bunker at this end of the car and circulation is established. During the cooler seasons of the year both connections are made simultaneously. The differential pressures, of course, control the speed with which the air passes; the violence of the current permeates to the center of every package, which is an essential consideration in proper pre-cooling.

The total amount of refrigeration consumed by a car of fruit averages about three tons, depending upon the initial temperature of the fruit, which, varying with the season of the year, may cause this amount to become as low as one and one-half tons or as high as four tons of refrigeration. The amount of air circulating through each car in a period of four hours approximates one and one-half million cubic feet. When the plant is running at maximum capacity the amount of air circulated through each car per minute is about 8,000 cubic feet, with an average loss of not exceeding 5 per cent. The cars are cooled to about 40 to 45 degrees Fahrenheit. For icing the cars, upon the completion of pre-cooling, or for such cars as are not pre-cooled, the ice is handled by the endless-chain conveyor, running through the day and winter storage. Here it may be diverted or carried on to the dock, the conveyor traversing the full length on both sides and making the ice accessible for immediate loading.

The plant is provided with facilities for metering all the brine used in pre-cooling, and in cooling the ice-storage chambers, also with thermometers giving the temperatures at all such places. Barometric columns are installed in the main air ducts and laterals, showing the pressure at which the air is circulated and returned. To afford a complete refrigerating record on every car handled the velocity of air in both feed and return laterals is measured. A brine system of refrigeration has its advantages in pre-cooling work. During the period of changing trains and other intermissions the plant is given an opportunity to store up cold brine, placing it in position to properly handle the large refrigerating demands made when a full load is incurred. The original charge of ammonia at the Santa Fe plant was about 13,000 pounds, and during its period of operation this has been added to but slightly.

The plant represents an investment of about $900,000.

The time consumed at this plant in connecting up two strings of fifteen cars each to the 22-inch air ducts and establishing complete circulation with four operatives employed in the work of making connections is only ten minutes, and the carrying temperatures are reached in the period of four hours or less, as compared with twenty-four to forty hours under ordinary cold storage conditions.

During the month of April, 1912, the San Bernardino plant pre-cooled from 50 to 150 cars of fruit a day to an average carrying temperature of 45 degrees, and in no instance was more than four hours required to cool a full setting of 30 cars to such temperature, and at average measured refrigeration of less than three tons per car so pre-cooled, making the actual cost of pre-cooling much less than the cost of handling alone under storage conditions.

The Supply Man and the Railroads

By E. H. Walker, Vice-President, Standard Coupler Company.

Note: The following paragraphs are taken from an address delivered before the September meeting of the Richmond Railroad Club.

TO-DAY the railroad man recognizes the supply man as worthy of being taken into the family. A friendliness exists, like the colored woman, who replied when asked how her new husband treated her: "Why, that man treats me more like a friend, than a relative." He is now consulted when family matters are under discussion. He is called upon for help, when the family exchequer runs low. If new cars are needed, the car builders and car specialty men are invited to talk about them and to suggest and submit designs. If locomotives, machine shops, rails, signals, water tanks, waste, or tin cups are to be bought, the men interested in their manufacture and sale are called into conference. The railroad man to-day welcomes into the family conference room the well-informed supply man, because he gives valuable and highly specialized information, compiled by engineers who have devoted their lives to individual lines or specialties.

Now, as a result of being invited into the family, or, perhaps, one of the reasons he was invited in, the supply man no longer closes a deal with the passing of the money. He not only studies the conditions under which his device must operate before he tries to sell it, and spends time and money to bring it to as near operating perfection as is possible, but he is just as anxious to have his device work successfully after its sale; in other words, the supply man to-day is selling service, and he obligates himself to see that service performed. He is now a recognized member of the family, and his interest in a railroad grows as the increasing quantity of his goods go into service. He is constantly watching the increasing train tonnage and tons per loaded car, the reduction of bad orders, the lengthening of mileage before back shop work must be done and watching with interest and pride equal to that of the railroad operating official, because he feels he had some part in that greater efficiency. He also studies railroad officials, not only before they buy his goods, but just as particularly afterwards, and he compares their efficiency, with officials on other lines, particularly as to results obtained with his goods. You shop men know how one man will get twice as much work out of a tool as will his bench mate. This difference exists all through the ranks, and the supply man of to-day is earnestly working to get the service of his device on every railroad up to the same high standard. Many concerns keep men on the road constantly, instructing the operatives how to take better care of their goods and how to get better and longer service from them.

Now, as to prices. Generally speaking, the railroads to-day purchase their necessities cheaper than does any other buyer. This close buying is the result (1st) of better harmony between the departments consuming the materials and the purchasing department; (2d) of greater efficiency in the purchasing department, and by this I mean, knowledge of the markets, of the origin and manufacture of railroad materials, of the use or purpose of the purchased articles and what service they should perform; (3d) and not the least effective, is the better understanding and mutual confidence that has grown up between these two relations—the purchaser and the manufacturer.

There is another thought in connection with this Railroad Family and the better atmosphere therein: We have all heard, or heard of, poor relations "roasting" their richer relatives, especially if the treatment accorded them was not to their liking. I am inclined to think that when the supply man was given the cold cuts instead of the warm welcome he thought was his due, he did not hesitate to do some "knocking" himself when the subject of railroads came up in his presence. The railroad man sees the supply man generally only in the position of asking for business, a suppliant for favor. The other side of the picture is that the supply man in his own community is a dignified personage. He employs labor, he pays wages, buys materials, and spends money for freight and passenger fares. He belongs to organizations of public and private character, and is a potential factor in the forming of public sentiment.

A good deal of jocularity has been indulged in because of our ability to talk. We have to talk, to sell things. I never yet met a deaf and dumb salesman, and I can imagine what some of you would think if I should come into your office and pull off a moving picture stunt. The supply man has had to talk and is still talking, but he is broadening the scope of his conversational powers. Wherever you go to-day, you hear him; in the hotel lobbies, smoking rooms of sleepers, club rooms, in his private or public life, in his organizations and even in church, boosting for the Railroad Family. This is partly selfish, because he knows that he does not prosper if you do not, but let me tell you, it is also largely sentimental, because he is now recognized as not an inconsequential part of the family. And the sentimental flavors the selfish until the boost is not only invigorating to the boostee, but the flavor is appetizing in the mouth of the booster.

We must not think, however, that all our family troubles are over—far from it. Family jars are liable to occur, and some families are in a jar all the time. You remember the story of the servant girl who gave her mistress the usual week's notice of quitting. When reproached for leaving, and asked if she had not always been treated like one of the family, she replied: "Yessum, that's just it. You've treated me just like a member of the family, and I've stood it as long as I could."

There will always be differences of opinion between individual members of the family, but as long as these are honest differences, and as long as healthy family relations are maintained, the supply man will be found lined up, ready to go to the front, when his money, brains or conversation are needed for the family—the transportation interests of this country.

We had a common ancestor, we have common interests. Why shouldn't we stand together and work together, with mutual respect, and with family ties growing closer each year?

Report on Recommendations of Latin-American Trade Committee

Note: The committee appointed by the Honorable W. C. Redfield, Secretary of Commerce of the United States, representing practically all branches of trade and commerce, and of which James A. Farrell is chairman, has made its report on South American trade conditions and how increased exports to those countries may best be accomplished by the merchants of the United States. After dealing with present South American trade conditions, the character and value of the present importation into those countries, as well as the part played by the United States in this trade, the report deals with the possibilities of the future. The following paragraphs will prove of particular interest to railway traffic officials as coming from an authoritative source after a comprehensive investigation of the whole situation.

(1) Because of the war the Latin-American countries are confronted by the necessity:
  (a) of marketing their products despite the shrinkage of world purchasing power.
  (b) of obtaining funds to move crops and to continue indispensable industrial and agricultural development normally financed by Europe.
(2) The United States is confronted:
  (a) By the necessity of holding its normal export trade with Latin-America.
  (b) By the possibility of increasing that trade by filling Latin-American needs for merchandise hitherto purchased in Europe, which Europe cannot now supply.

The solution of these problems depends upon:

(1) Production.
(2) Transportation—Shipping and Insurance.
(3) Financing:
  (a) of Production.
  (b) of Transportation.
  (c) of Settlements.

Production in the United States can be maintained if there be a sufficient market at home and abroad for American goods. Production in South America may continue but cannot be further developed unless financial assistance be obtained.

At the present time steamships are available and sailing regularly from this country to the principal ports of Latin-America and from those ports to the United States. Many of these vessels are unable to obtain full cargoes. Although only a limited number are under the United States flag the above will clearly indicate to exporters, importers and manufacturers that they need not hold back from entering the field on this account.

Before trade can resume its normal course, the exchange problem must be solved, either by the restoration of old, or by establishment of new credit facilities.

New Credit Machinery Needed.

Old methods may no longer be serviceable in the situation which will result from the readjustment following the war. It should now be possible indeed, in the mutual interest of the Latin-American Republics and ourselves, to create new credit machinery to perform the functions of the old, and which will at the same time rid us, at least partially, of a dependence upon the London credits and European financial markets which, though essential in the past, has proved to be seriously embarrassing.

Deprived of the European loans with which their resources were being developed, Latin-American countries are now undergoing a serious curtailment of industry and development. The consequences in many instances will be serious, not only to these countries themselves but also to the countries which expected to supply the materials.

It has been increasingly the practice of European bankers to stipulate the use of European material in the projects which they financed. Latin-America is now turning to the United States for funds. This country is hardly in a position to undertake considerable investments at the present time, *but industries with an already considerable trade at stake may well consider the necessity of protecting that trade by obtaining for their customers some relief from the present stringency. Such investments, if judicially made, would yield an ultimate fair return and meanwhile provide a market for American materials which cannot now be sold.*

The question of creating a market for Latin-American securities in the United States, therefore, is highly important. The development of our trade with those countries is largely dependent on its satisfactory solution.

Establishment of Commercial Credits Most Important.

Unless the restriction of commercial credits be remedied, however, we will not only be unable to extend our trade but we will lose a considerable portion of that which we already have.

The present effort to secure co-operation of American bankers in massing a gold fund to satisfy our obligations abroad by promising to cause London exchange again to approach normal, will lessen to the American importer the expense of liquidating in London his South American indebtedness. It will nevertheless give effect to the old alienation of the selling power we *should* derive from purchases of South American products. Liquidation of South American indebtedness in London will pay for British exports to Latin-America, at a time when American merchandise, intimidated by moratoria, remains congested on our docks. Our available money will serve Great Britain's effort to capture South American markets vacated, perforce, by Germany.

Whenever there is a great disturbance of the world's finances, American exporters and importers in South American trade are injured, because of their dependence on London. *This has happened four times in twenty-five years.*

So long as South America must meet interest settlements in London by shipment of goods to the United States, under the old three-cornered system, our South American trade must, to a certain degree, depend upon London exchange.

But in view of the facts above mentioned, it has seemed to your committee that the need for independence, emphasized by the present situation, should be recognized. We feel that an attempt should now be made to evolve some plan whereby we might take advantage of our large direct trade with Latin-America to make a market for bills drawn in dollars, and establish a direct exchange, not with the view of eliminating sterling credits now or later, but in order to provide an exchange channel which will supplement, offset or compete with London, and be available in an emergency when London exchange is disorganized.

The maintenance of exchange relations depends on a credit machinery and reciprocal balances. This machinery will partially be provided under the Federal Reserve Act, which permits American banks to open branches abroad and permits a rediscount in this country of commercial paper, based upon shipments of commodities in foreign trade. These steps, however, have not yet been effected, and your committee appreciating that the installation of this machinery may require considerable time, has considered means for temporary relief.

Co-operative Exchange as Emergency Measure.

A plan for the establishment of a Merchants' "Co-operative Exchange," or clearing house for Latin-American trade, has been proposed. This, it has been suggested, would enable importers and exporters of goods to and from Latin-America to watch credits, balances to be remitted on certain definite settling dates. The chief argument for such an institution is that it would bring together exporters and importers among whom there is now no cohesion. Both know their cash requirements each month. If the exporters require say $5,000,000 to pay for their October shipments to Brazil and the importers a like amount to pay for their imports from Brazil, such an exchange might be able easily to liquidate transactions in New York.

The plan, however, is open to serious objection for the following reasons:

(1) The necessity and difficulty of securing the co-operation of a sufficient number of importers and exporters.

(2) The necessity and difficulty of standardizing credits.

(3) The difficulty of reaching an agreement as to the rate of exchange between South American currency and United States dollars.

(4) The difficulty due to the seasonal variations of shipments of South American produce and the consequent fluctuation in the demand for balances in New York or South America.

(5) The disorganized financial situation in South America, which increases the risk in securing settlements in the South American republics.

(6) The necessity of creating and maintaining an expert and, therefore, expensive organization.

The difficulty as regards South America, however, would still remain, for it would be impossible within any reasonable time to organize in the principal cities of South America sufficiently extensive co-operative associations of importers and exporters of American products.

Standardization of South American credits, therefore, could only be secured by the guarantee of American shippers or importers, or by the guarantee of the South American governments themselves.

Your committee, therefore, after careful consideration, feels that the suggested "co-operative exchange" would not be practical, although a powerful banking group or large banking institution willing to assist in maintaining and developing our Latin-American trade might be able to secure and render mutually beneficial the organized co-operation of exporters and importers in matching credits.

RECOMMENDATIONS.

Your committee, however, believes that the extension of credits might be facilitated and some relief afforded, pending the establishment of the Federal Reserve Banks if, in addition to permitting national banks which have signified their intention to enter the Reserve Associations, to accept commercial paper, action be taken by the Federal Reserve Board to make immediately effective the rediscount provision of the new banking system thus assuring early establishment of a discount market.

Your committee, while appreciating the necessity of conserving the banking resources of this country for the protection of our domestic situation, nevertheless believes that the *cessation or curtailment of our trade with Latin-America will in itself be highly injurious to American industry,* just as we believe that *the extension of this trade would make for the prosperity of the country at large,* as well as of those directly interested. We therefore hope that American banking institutions may be induced to meet the present emergency, not by tentative and inadequate measures, but by extending accommodation sufficient at least to assure the maintenance of our already established trade.

EXTENSION OF TRADE.

The question of extending American commerce with Latin-America depends primarily, as does the problem of maintaining our trade, upon the establishment of commercial credits, upon our ability to finance Latin-American enterprise, purchase the products of its soil and industries and upon the perfection of our selling machinery.

Your committee has not attempted to formulate suggestions as to the manner in which the individual manufacturer should proceed to establish a market for his products in South America. Nor does it here dwell upon the importance of adaptation of the product to the needs of the market or proper packing. Too high praise can not be given the Government, particularly the Department of Commerce under the Hon. W. C. Redfield, for its effective propaganda on these essential points and for its efforts adequately to assist extension of our foreign trade.

CAUTION NOW ADVISABLE.

Your committee feels, however, that merchants and manufacturers now contemplating an entry into the Latin-American field should be careful to avail themselves of the easily accessible information concerning these markets. It is suggested that they should, at the outset, remember that the cost of maintaining individual representatives would probably be too great for any one of them to bear themselves. It is therefore suggested that associations consisting of the smaller firms or corporations engaged in kindred lines of production might be formed, and that either one or more representatives should be sent to South America to look after the interests of such associations, thereby bringing the cost of representation within a reasonable limit.

It has been suggested that American manufacturers should combine to send to South America trade exhibits, showing the various articles which they have for sale. Your committee, however, is not inclined to feel that such measures would be productive of any permanent results. It is suggested instead that manufacturers and dealers desiring to place their products in Latin-America, and who, for any reason, prefer not to send their own representatives there could establish connections with export houses already doing business in those countries and maintaining large branch offices in the principal South American cities fully equipped with efficient sales organizations or who have established connections, and in certain lines of goods—foodstuffs, notions, and miscellaneous articles—join in establishing what might be called for want of a better name an "American Store," in certain of the most important cities.

Ventures of this sort, however, require considerable capital and experienced men, and for the sake of the ultimate development of mutually beneficial commercial relations with Latin-America it is believed that our merchants and manufacturers should not attempt to instal their own establishments in Latin-America unless they are prepared to meet initial losses and disappointments before realizing even moderate profits in what must necessarily be a developing, rather than a ready made business.

Your committee begs, therefore, to summarize the results of the investigations and to state its belief that the present disorganization of the trade of the United States with Latin-America may best be remedied and placed on a permanently satisfactory basis as follows:

1. The establishment of a dollar exchange.
    (a) By the ultimate creation of a discount market.
    (b) Pending the establishment of a discount market, by the extension of adequate accommodation by banking institutions and the establishment of reciprocal balances in the United States and in Latin-America for financing Latin-American trade.
2. Perfection of our selling machinery.
    (a) By furnishing additional support to commission houses already familiar with Latin-American business.
    (b) By forming associations of merchants and manufacturers to be jointly represented in Latin-America.
    (c) By obtaining information as to the possibilities of developing retail stores in large Latin-American cities.

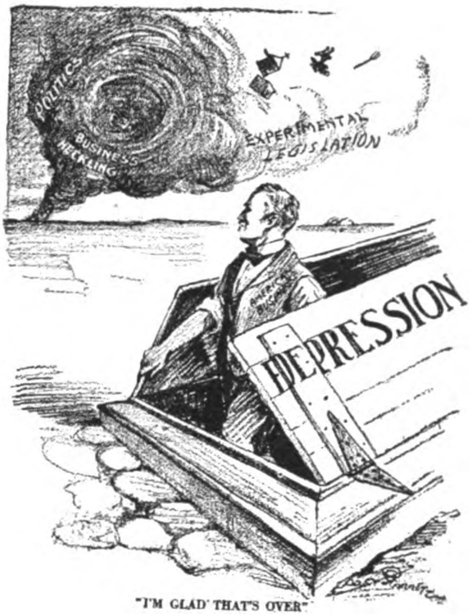
Financial

The Outlook.

GENERAL conditions have undergone considerable improvement since a month ago. The election showed a strong desire on the part of the people for a return to more conservative methods in legislative activities, and it is felt that this warning will be heeded by the present administration, and that the next two years will witness a consistent effort to again restore general prosperity. In fact, the President of the United States in a letter written on November 17th, to Secretary McAdoo of the Treasury Department, practically asserts that the democratic program of remedial legislation has been completed and that the future can now be devoted to the upbuilding of national prosperity on a sound basis. The future can alone decide the accuracy of the President's predictions, but the tone of his letter, which was enthusiastically optimistic, will undoubtedly have a beneficial effect on the minds of the general public.

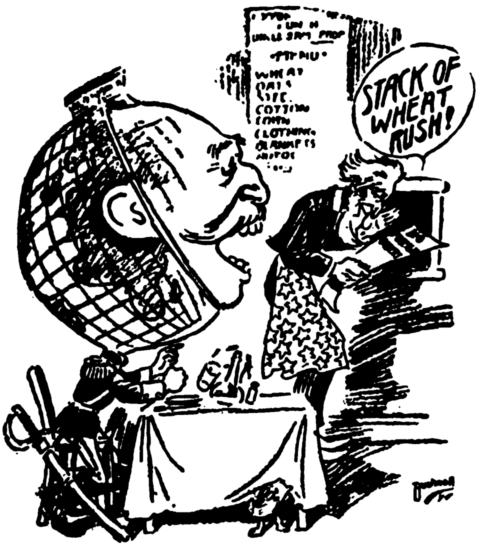
Railway earnings still continue unsatisfactory, but there are indications of a distinct revival in certain branches of business, which will be felt later in increased tonnage. This is particularly true of the steel trade, and recent orders placed in the Pittsburgh, as well as in other steel districts, show a return to practically normal conditions, with indications of boom times within a comparatively short time. Furnaces are being blown in, idle men are obtaining work and new orders are being received in satisfactory volume.

The whole country is, of course, awaiting the Interstate Commerce Commission's decision in the Eastern advance rate case. A favorable decision means the restoration of confidence both at home and abroad in American railway securities and would undoubtedly result, in a short time, in enabling the carriers to again adopt a progressive policy in the operation of their lines and actively engage in the rehabilitation of their properties. This stimulation in railway purchases, which would thus be accomplished, would rapidly be felt by every business in the country and would do more to restore prosperity than any other single influence. It would appear incredible, under the circumstances, that the Commission could refuse the railways the relief which is so urgently needed, and which was so conclusively proved to be necessary at the recent re-hearing. The business men of the country are almost unanimous in their desire for the Commission to grant the increase, and it is confidently expected that favorable action will be taken.



"I'M GLAD THAT'S OVER"

—From the *Philadelphia Ledger*.



Business 'is picking up. —Mobile Register.

Revenues and Expenses of Steam Roads for August.

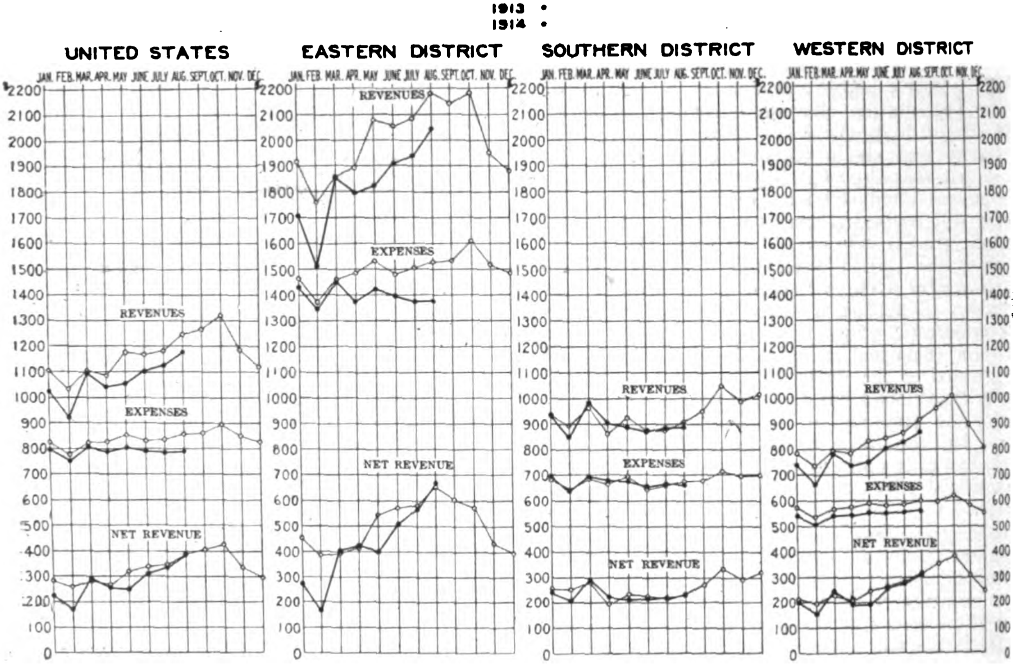
THE Bureau of Railway Economics has issued its Bulletin No. 68, which contains a statistical summary of the revenues and expenses of steam roads in the United States for the month of August, 1914.

The situation, in brief, reveals the fact that railway operating income for August, reduced to a per mile of line basis and compared with that for August, 1913, shows a decrease of $3. or 0.8 per cent, while operating income per mile for August, 1913, showed a decrease of 13.6 per cent from that of August 1912. Total operating revenues per mile for August decreased 5.6 per cent as compared with August, 1913, operating expenses per mile decreased 7.8 per cent, and net operating revenue per mile decreased 0.6 per cent.

Railways operating 227,184 miles of line are covered by this summary, or about ninety per cent of all steam railway mileage in the United States. Their operating revenues for the month of August, 1914, amounted to $256,928,165. This

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1 000 000



The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail- and auxiliary operations. Compared with August, 1913, these operating revenues show a decrease of $12,496,358. Total operating revenues per mile averaged $1,175 in August, 1914, and $1,244 in August 1913, a decrease of $69, or 5.6 per cent.

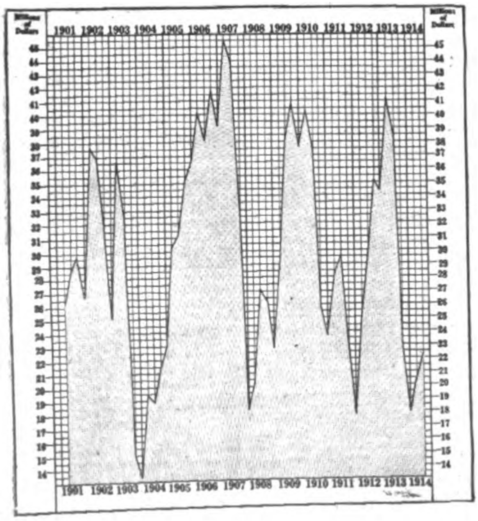
Operating expenses, which include the cost of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $179,163,880. This was $12,989,650 less than for August, 1913. These operating expenses per mile of line averaged $789 in August, 1914, and $856 in August, 1913, a decrease of $67 per mile, or 7.8 per cent.

Net operating revenue, that is, total operating revenues of rail and auxiliary operations less operating expenses, amounted to $87,764,285, which was $493,292 more than for August, 1913, but that this increase is due to increase in mileage is shown by the fact that net operating revenue per mile decreased. Net operating revenue per mile of line averaged $386 in August, 1914, and $388 in August, 1913, a decrease of $2 per mile, or 0.6 per cent.

Taxes for the month of August amounted to $11,288,351, or $50 per mile, an increase of 0.7 per cent over August, 1913.

Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $336 per mile of line, and in August, 1913, $339, thus decreasing $3 or 0.8 per cent. Operating income for each mile of line for each day in August averaged $10.85 and in August, 1913, $10.95. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction, and for dividends.

The Steel Trust's Quarterly Earnings



Recent Railway Earnings.

INCOMPLETE returns of railway gross earnings for October made to the "Commercial and Financial Chronicle," show alarming declines in all sections of the country. Stated in brief, the United States and Canadian roads represented in this early statement and which embraces only 92,332 miles of road, show a loss in gross earnings of no less than $14,000,000 or about sixteen per cent, as compared with similar returns for the same month of 1913. In other words, gross earnings for October of the present year were $75,500,000 as compared with $90,000,000 for the tenth month of 1913. In general, all classes of roads in all sections of the country contributed to the decline. The following table shows both the increases and decreases for October as tabulated by the "Chronicle":

Principal Changes in Gross Earnings in October.

	Increases.
Chesapeake & Ohio	$136,505
Denver & Salt Lake	78,625
Detroit Toledo & Ironton	66,156
Colorado & Southern	65,019
Mineral Range	50,224
Representing 5 roads in our compilation	$396,529
	Decreases.
Canadian Pacific	$5,205,000
Louisville & Nashville	1,302,749
Southern Railway	1,271,909
Great Northern	949,406
Canadian Northern	791,800
Illinois Central	644,893
Grand Trunk	643,224
Seaboard Air Line	516,275
Mobile & Ohio	310,713
Missouri Pacific	307,000
Wabash	306,391
Buffalo Rochester & Pitts	298,057
Grand Trunk Pacific	[a]264,095
Denver & Rio Grande	199,500
St Louis Southwestern	183,000
Western Pacific	155,000
Yazoo & Miss Valley	152,338
Cinc New Orl & Tex Pac	148,242
Alabama Great Southern	127,142
Chicago & Alton	125,947
Texas & Pacific	125,662
Duluth South Shore & Atl	92,944
Missouri Kansas & Texas	82,538
Chicago Ind & Louisville	72,205
New Orl & Northeastern	66,417
Minneap St Paul & S S M	54,322
Midland Valley	39,292
Minneap & St Louis	38,712
Alabama & Vicksburg	35,337
Georgia Southern & Fla	34,333
Vicks Shreve & Pacific	33,556
Chicago Great Western	31,415
Representing 32 roads in our compilation	$14,609,421

These returns are, of course, of a most disquieting character and losses are now reaching such proportions that railroad managers are practicing the most rigid economy in order to avert bankruptcy.

The same Journal has issued a more complete statement regarding both gross and net returns for the month of September. So rigid were the economies practiced during that month that, in spite of a loss in gross of nearly $13,000,000, net earnings showed an increase of over $700,000, as indicated in the following statement:

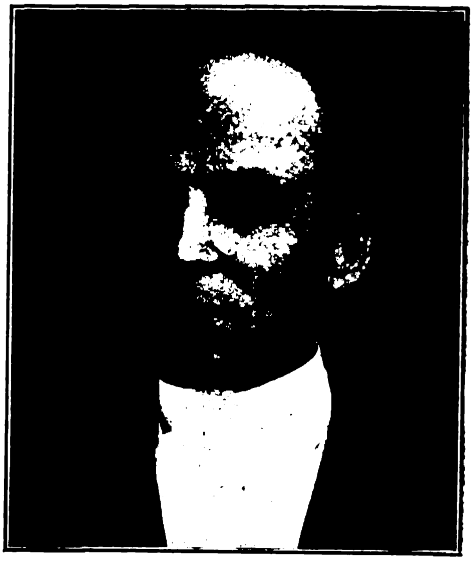
September (469 *roads*)—	1914.	1913.	*Inc.* (+) *or Dec.* (—). *Amount.*	%
Miles of road	242,386	238,698	+3,688	1.55
Gross earnings	$272,992,901	$285,850,745	—$12,857,844	4.50
Operating expenses	180,969,954	194,576,712	—13,606,758	6.99
Net Earnings	$92,022,947	$91,274,033	+$748,914	0.82

In this connection, however, it should not be forgotten that comparisons are with a diminished net of over $5,000,000 of a year ago, while the economies which have been made necessary to procure even this negative result, have proved extremely detrimental to the entire railway system as well as to the general prosperity of the country. To quote from the "Chronicle's" statement:

"Comparison is with diminished net a year ago. For September, 1913, our completed returns showed only a moderate gain in gross, namely $9,805,231, or 3.56 per cent, and this was attended by an augmentation in expenses of $14,958,298, or 8.44 per cent, causing, therefore, a loss in net of $5,153,067, or 5.26 per cent. In September, 1912, on the other hand, the gain in gross revenues was of more satisfactory extent, but the net even then failed to keep pace with the rise in gross receipts. In other words, our September statement for 1912 showed $19,891,032 increase in gross, or 7.88 per cent, but this was attended by an addition to expenses of $13,855,420, or 8.58 per cent, leaving, therefore, only $6,035,612 increase in net, or 6.64 per cent."

Eastern Railroads' Losses in July and August.

THE railroads in Eastern territory now applying for an advance of five per cent in freight rates have filed with the Interstate Commerce Commission detailed statements



Bishop John C. Kilgo of Durham, N. C.
Recently Elected to Board of Directors of the Southern Railway.

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[a] These figures are for three weeks only.

of their operating results for the first two months of the fiscal year 1915. These figures show a loss in operating income for these two months as compared with the same months of the last fiscal year amounting to $271,190, and a loss as compared with the same months of 1913 of $9,878,000.

Total earnings are less than 1914 by nearly $15,000,000, and operating expenses have been reduced by almost precisely the same amount.

The loss in gross revenues for the two months is represented by a reduction of $9,966,000 in freight, and $4,246,000 in passenger earnings.

Railroad Securities Maturing in 1915, 1916 and 1917.

ILLUSTRATIVE of the significance of the claim of the railroads that the difficulties of securing new capital and of refunding old issues will be greatly increased as a result of the war in Europe, the Eastern railroads have filed with the Interstate Commerce Commission a statement of the aggregate amount of securities maturing during the fiscal years ending June 30, 1915, 1916 and 1917, respectively, for those railroads now asking an increase in freight rates.

These railroads alone must pay off or refund a total of $537,000,000 during the next three years.

* * * *

Of this amount, $325,000,000 are represented by short-time notes, debentures and plain bonds. Of mortgage bonds, $26,000,000 will mature; of collateral trust bonds, $62,000,000; of equipment obligations, $92,000,000; of receivers' certificates, $30,000,000.

By far the greater portion of these maturities will become due before June 30, 1915, the total amount which must be refunded by that time being $320,000,000, of which, $220,000,000 are notes, debentures and plain bonds.

Out of $537,000,000 due by all of these railroads, $303,000,000 represent obligations of the three so-called typical systems, namely, the Pennsylvania, Baltimore and Ohio, and New York Central Systems. These companies alone must pay off $174,000,000 before June 30, 1915, and of this amount, $156,000,000 is represented by short-time notes, debentures and plain bonds.

Public Service Commission Approves Long Island Railroad's Bond Issue.

THE Up-State Public Service Commission of New York has approved an issue of a million dollars of the Long Island Railroad's gold 5 per cent equipment trust obligations, Series A. The total issue will be for $1,060,000 to be sold at not less than par and accrued interest, pursuant to an arrangement with The Fidelity Trust Company and Edward P. Gest as trustee. The proceeds, plus a cash payment of $125,000 will be used in the acquisition of the following equipment:

Twelve steel P.54 passenger cars, 3 steel P.B.54 passenger and baggage combination cars, 40 steel M.P.54 motor passenger cars, 15 steel M.P.B.54 motor passenger and baggage cars, 20 steel B.40 baggage and express cars, 4 steel B.M.62 baggage and mail cars, and 3 M.P.B.M. motor passenger, baggage and mail cars.

The car trust certificates, guaranteed principal and interest by the Long Island, are to be taken up in ten annual payments of $106,000 and interest.

Operation

Car Interchange.

H. BOUTET, chief interchange inspector at Cincinnati, Ohio, recently addressed the members of the South and Southwestern Railway Club on the subject of "Interchange of Cars." After analyzing and criticising some of the methods now in vogue and showing the necessity of the closer co-operation between all employes and factors involved, Mr. Boutet gave the following description of the methods employed at Cincinnati:

"Let us take the situation at Cincinnati. The majority of interchange is made through switching lines or through two or three yards by the delivering line, the distance between some of the delivering line and receiving line yards being twenty-six miles.

"There are several methods by which inspection and interchange could be made, all of which the writer claims is within scope of M. C. B. Rules.

"First. It could be made by the receiving lines putting their inspectors in the delivering line's yard and after the cars are side carded, inspecting and marking out such cars that they want repaired, transferred or carded. Cars passing the inspectors as O. K. for service could be switched out and delivered to the receiving line.

"Second. Cars could be inspected by the delivering line's inspectors and cars that they think should be repaired or transferred and defects that they think should be cared for, should be carded and delivered to the receiving line.

"Third. The inspectors could be placed under the chief interchange inspector, cars inspected in the delivering line yards, cars that are required to be set out could be marked out, those requiring repairs could be repaired, those requiring transfer could be transferred and those requiring cards could be carded.

"Fourth. Cars could be given a safety inspection in the delivering line yard by the delivering line's inspectors to see that the cars are safe to go to the repair or transfer track of the receiving line, when they are delivered in the receiving line's yard they could be inspected by the receiving line's inspectors, cars that require repairs or transfer are set out for necessary work and the cars requiring cards could be carded.

"Now let us see the advantages and disadvantages of these different plans.

"First. It would be necessary for the lines to have twice as many inspectors or more than would be required under the other plans, as no road would agree to have a car inspected in a foreign yard and then switched and handled by a foreign road, without again being inspected when received in their yard.

"You would have the advantage of having all bad order cars set out in the delivering line yard, consequently, you would only receive good cars or only such bad cars as were made such after inspection.

"Again, it should be taken into account, that no inspector would take any responsibility if he was placed in the delivering line yard and if there was any question at all he would set the car out. His foreman would not take any great exceptions to this, for if the delivering line foreman would come to him and tell him that his inspectors were too close, the only answer he would get was that they were not any closer than your inspectors, for your inspectors are doing the same in my yard, and when you have your inspectors set out only such cars as should be set out, I will have my inspectors do the same thing. The consequence would be, if you did not have a chief interchange inspector or assistants located in each yard both day and night, your line would be blocked in twenty-four hours with cars that the receiving line's inspectors had set out for repairs or transfer, when in fact a great number of them should not have been set out, but should have been on their way to destination.

"You have delayed freight, caused extra switching and consequently, created additional expense, and also created a feeling with the shipper that you had not attempted to give him the proper service.

"Second system. It has never been found that the delivering line will inspect and card all cars that the receiving line wants carded or set out all cars that the receiving line thinks should be set out, either for transfer or repairs, nor will they card all cars for defects that the receiving line wants carded.

"This system has been tried at every large interchange point in the country and has never proved satisfactory.

"You have all of the work to do over, as you are not satisfied that the other fellow has given you all that you should have had and as you have to answer for the safety of equipment going over your line, you want to know positively that it meets all requirements and will have your own men inspect the cars as they come to you.

"Third system. This does not always prove satisfactory as the men you employ are under another man's jurisdiction and supervision and you are not always able to get results that you require, as the instructions that you require for your particular line are not always carried out in the manner you desire, as the instructions issued to inspectors are of a general nature and about on a par with what all the roads require. In this way you have your work to do over for about the same reasons as given in the second system.

"Fourth system. This has some disadvantages, but in the writer's opinion has a great many advantages over all of the other systems.

"You have the disadvantage of bad order cars to your line either for repairs or transfer, which is offset by the cars in the same condition going from your line to the other line.

"The advantages are numerous.

"You have the advantage of having your own inspectors in your own yard directly under your own supervision and you can require them to use their judgment, according to the instructions given by you in the marking out of cars for repair or transfer.

"Every car that they mark out is brought to the immediate attention of the car foreman and every car that they mark out that should not be marked out, you have the remedy which you can apply directly. The consequence is that they do not mark any cars out that you do not want marked out and in this manner save a lot of switching and confusion.

"Again, if a car should have a cotter key out or a bey bolt or other slight repairs, which the inspectors could not make in less time than they could mark the cars out, you will have them make these repairs, but if the car was in the other person's yard the inspector would make the claim that he was sent there to inspect cars and not repair them.

"The fourth manner, as described above, is the way the interchange is done at Cincinnati, as it is believed to have accomplished the best results, keeping the cars moving with as little loss of time and not setting cars out that do not require setting out, only setting out such cars that are liable to cause damage, the inspectors in the receiving line yard carding for all defects on cars that they do not wish set out.

"The assistant chief interchange inspector visiting each yard each day and carding all cars set out for repairs, combinations and heavy defects.

"This manner of carding has been in effect a little over two years and while there have been some cases where the inspectors have been wrong, where we have been compelled to give rebuttal cards to straighten the trouble, I have the first case to find where the inspector wilfully misused the cards.

"There is no set back of cars for bad condition, except through instructions of the chief interchange inspector, which consequently put the set back cars at a minimum.

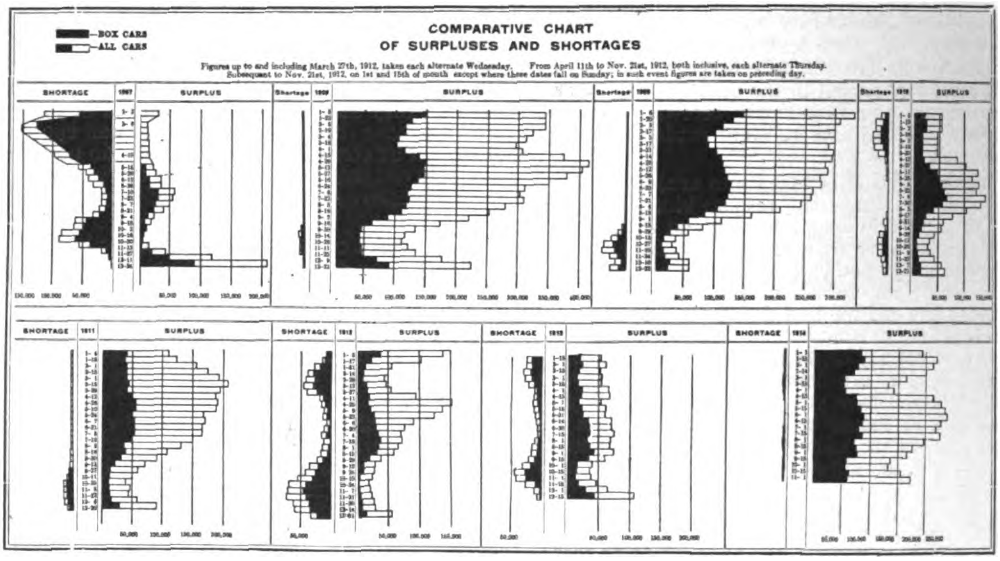
"This manner of interchange is believed by the writer to be the best system of interchange in the country to-day, as there is less friction and contentions than we have ever had with any other system that has been tried at this point, and I believe that it compares favorably with any other large interchange point in the country and it does not deviate from the principles laid down by the M. C. B. Rules."

Careful Use of Whistles and Bells.

VICE-PRESIDENT and General Manager W. R. Scott of the Southern Pacific Company, has called upon all engineers on the Pacific System to be more careful in the use of whistles and locomotive bells when passing through the limits of cities and towns, especially at night, in order not to cause annoyance to residents or to disturb the slumbers of those living along the railroad right of way.

Mr. Scott refers to the fact that the use of whistles and bells is closely regulated and called for under penalty of fine by State laws, and that the railroad, for reasons of safety in train operation, is compelled to signal to its trainmen and to warn drivers and pedestrians at crossings by these means.

Under the rules of the Southern Pacific, whenever a train has stopped beyond a certain length of time, a flagman must be sent out to protect



his train from another that might be approaching. When the engineer is ready to start again, he must call in his flagman by four blasts on his whistle. The bell must be rung when an engine is about to be moved, or when nearing a street or highway crossing at grade.

Strict adherence to these rules is necessary in order that the lives of passengers may be amply protected, and that automobile and team drivers as well as pedestrians at crossings and along the track be warned of the approach of a train.

Mr. Scott calls on engineers, while strictly maintaining all safety precautions and faithfully observing the law, not to prolong whistling or bell ringing unnecessarily.

Latest Report on Car Situation.

THE report of the American Railway Association issued on November 9th, with reference to the car situation, discloses disquieting developments. The total surplus on November 1, 1914, was 172,325 cars as compared with 154,342 on October 15, 1914 and but 38,276 on November 1, 1913. The increase of idle cars, as indicated by these figures, is not only unusually heavy for this time of the year but the total surplus is greater than it has been for the same period since the American Railway Association began the publication of these reports. The accompanying diagram presents a record of the surpluses and shortages for a period of eight years.

Prompt Movement of Passenger Trains on the Pennsylvania.

A RECORD of all passenger trains on the Pennsylvania Lines East of Pittsburgh and Erie shows that out of a total number of 412,187 trains running over the different divisions during the first six months of 1914, 371,523, or 90.1 per cent, made schedule time, while 345,653, or 84.5 per cent, arrived at their destinations on time.

The heavy storms of last winter and early spring played havoc with the time schedules of the railroads. But despite this the Pennsylvania Railroad was able to keep this large percentage of its trains running on schedule time.

The best record for the six months for trains making schedule time is held by the Cresson Division; out of a total of 6742 trains running over the Division, 6492, or 96.2 per cent, made schedule time.

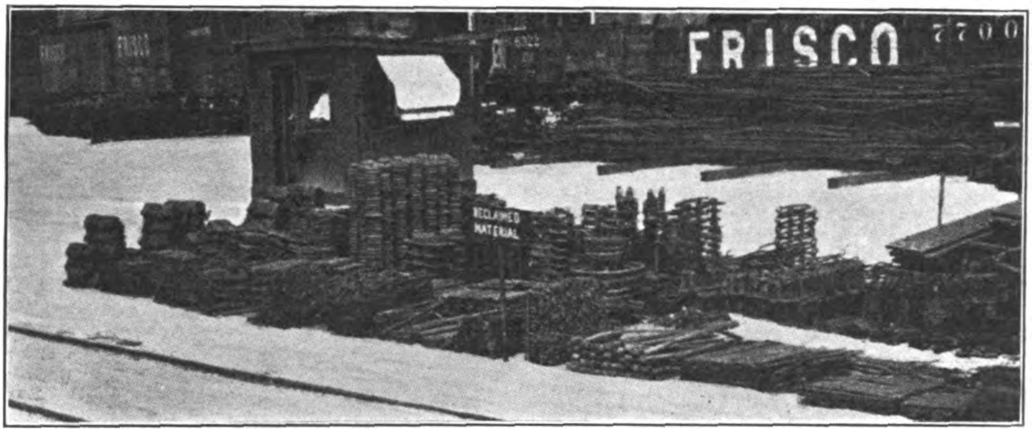
Electric trains on the West Jersey and Seashore Division have the best record for arriving at their destinations on time; 14,939 electric trains traveled over this division from January 1st to July 1st, and out of this number only 715 were late, a percentage on time of 95.2.

The Trenton Division has a record of 92.2 per cent for trains making schedule time, and 86.9 per cent for trains arriving on time. The Pittsburgh Division is slightly below this, with a record of 91.1 per cent for schedule time and 82.3 per cent for trains arriving on time. Next comes the Philadelphia Division, with a percentage of 88.1 for trains making schedule time, and 80.2 per cent for trains on time.

On the New York Division, over which 67,180 trains traveled, the greatest number on any division of the Lines East, a record of 82.6 per cent was made for trains arriving on schedule time, and 77.4 for trains arriving on time. The Maryland Division also has a good record, for out of the 33,744 trains, 29,225, or 86.6 per cent, made schedule time, and 27,391, or 81.1 per cent, arrived at their destinations on time.

Order as a Factor in the Safety Movement.

WHILE order and cleanliness in all branches of the service is a vital factor in the successful development of the safety movement, these qualities apply with peculiar force to the reclamation plants of the railways, as in the handling of the various materials concentrated at such points, the hazard is unusually prominent. The accompanying photograph illustrates the order and neatness which prevails at the reclamation plant of the Frisco lines at Springfield, Mo. Despite the fact that old material from all over the line is collected and brought to this plant, it is



RECLAMATION PLANT OF THE FRISCO LINES AT SPRINGFIELD, MO.

classified and handled in such a way as to make conditions ideal in every particular. It will also be noted in the photograph that no material, tools or articles of any kind are to be found lying around the ground where persons are likely to stumble over them, nor is refuse of any kind strewn through the yards surrounding the buildings. If such conditions can prevail at reclamation plants, it can readily be understood that there is little excuse for lack of similar results at yards, roundhouses and shops.

The Safety Work of Southern Pacific Employes.

VICE-PRESIDENT and General Manager W. R. Scott, of the Southern Pacific Company, has addressed a letter to all employes of the system congratulating them upon the wonderful work accomplished in connection with the "Safety First" movement during the past year. Mr. Scott states that during the twelve months' period ending June 30, 1914, "there was a total of 4,013 safety suggestions submitted by employes, 3,621 of which, or over 81 per cent, were considered practical and placed in execution. These suggestions came from employes of every department and from every occupation. During the past year 50 per cent more suggestions were made than in the preceding year and over 81 per cent more practical suggestions were submitted. Compared with the number of employes in the service during the two years, there was an improvement of over 108 per cent in the number of practical suggestions per employe, which is a convincing figure of your interest and efforts."

Moving Pictures Employed in Greater Safety Work.

"STEVE HILL'S AWAKENING" is the title of the highly realistic motion picture play that has just been prepared by the New York Central Lines for use in connection with the company's educational campaign for safety. The pictures are well staged and vividly illustrate the typically unsafe practices of careless employes. The safety department of the New York Central Lines is to be congratulated on this interesting visualization of the causes of accidents it is so successfully striving to prevent, as shown by the company's record in accident reduction for the year.

How Safety Organizations Pay.

HOW the development of the safety organization has decreased casualties in the working force of the Whitacre, Glassner Company, of Wheeling, W. Va., is strikingly indicated by the accompanying diagram. During the period which this remarkable decrease occurred, the company suffered no loss of production, but on the contrary, the sum total of the safety work has resulted in a material increase in production throughout the plant.

At the Raritan Copper Works, Perth Amboy, N. J., during the year from September, 1913, accidents decreased 22 per cent. As the company's safety department has been in operation for little more than half of that period, however, the accident record really shows a decrease of 34 per cent. From September, 1913, to February, 1914, the accidents totaled 112; from March to September, 74.

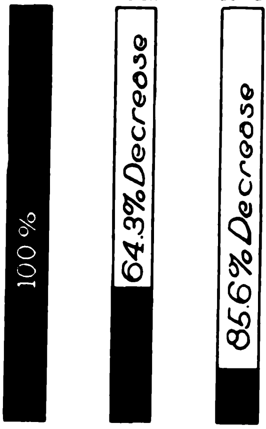


DIAGRAM SHOWING DECREASE OF PERMANENT INJURIES AT
MARTIN'S FERRY PLANT
WHEELING CORRUGATING CO.

The Copper Queen Consolidated Mining Company has just issued the first annual report of its safety department. It was difficult to make a comparison of the year's record with those of former periods, as complete accident records had not been kept previous to the organization of the safety department. Nevertheless, the company has found that fatal accidents have been reduced 55 per cent and serious accidents about 40 per cent.

These figures show what can be accomplished by co-operation. To every officer and employe in these organizations, credit is due for the splendid "Safety" records made by their companies.

Rock Island Places in Service New Combination Luncheon Dining Car.

THE Chicago, Rock Island and Pacific Railway has lately entered upon an experiment in lunch-counter service by transforming the passenger compartment of one of its regular 60-foot cafe coaches into a lunch room. In this compartment the original seats have been supplanted by the counter in connection with 12 revolving high-back stationary chairs. These fittings represent practically the entire expense involved in the transformation of the car, since the kitchen facilities already installed are depended on to serve also the lunch counter end. While a number of roads are trying the lunch counter scheme, this is believed to be the first instance in which the possible competition between the regular dining and the lunch counter service is to be tested out in the same car. Since both varieties of dining facilities are provided in such close relation to each other, a marked preference for one or the other, if it is to assert itself at all, should do so quickly and thus facilitate the determination of the advisability of extending either one, while at the same time the other is curtailed or discontinued.

As against the twelve chairs in the lunch counter compartment, there are seating accommodations for eighteen persons in the cafe compartment. On account of the lesser period or time that each average customer is likely to spend at the lunch counter, it would seem that the latter is capable of serving at least twice the number of patrons as the former with an equal or even greater margin of profit on the basis of money invested. The greater profit to the road in numbers of satisfied passengers as between the two kinds of service, depends on the prevailing desires of the passengers themselves.

This preference can only be determined after the car has been placed in actual service for some time, but in view of the employment of a combination car in which both classes are readily available, the company has adopted a most excellent method by which to determine which class of service is most popular.

LUNCH COUNTER IN ROCK ISLAND'S NEW COMBINATION LUNCHEON DINER CAR.

DINING COMPARTMENT IN ROCK ISLAND'S NEW COMBINATION LUNCHEON DINING CAR.

Mechanical

Reclaiming Waste and Scrap Material.

A. S. McKELLIGON, general storekeeper of the West Oakland general shops of the Southern Pacific, recently prepared the following statement showing the reclaimed waste and scrap material put into actual use at this shop from March 1st to September 30, 1914, a period of seven months. In the preparation of this statement, only material actually used was considered and the reclaimed material is figured at only half the price of the cost of new material. When it is considered that, in addition to the general shops at West Oakland, similar shops at Los Angeles, Sacramento and Portland, as well as division stores and smaller stores at various points on the line are all now employing methods of this character, it is easy to understand that the aggregate yearly saving must be enormous.

Air Brake Material—consisting chiefly of Cutout and Angle Cocks removed from Scrap Pipe	461.81
Brass, Copper and Lead—removed chiefly from Scrap Pipe, Hose, Castings, etc.	1,457.72
Pipe, Second-hand—sorted out from the Scrap	144.14
Fittings, Pipe—taken from Scrap Pipe 6,780 Fittings	228.36
Malleable Castings	561.88
Gray Iron Castings	113.95
Forgings	462.89
Bar and Angle Iron	64.52
Bolts, Nuts, Washers, Rivets, etc.	645.22
Couplers and Parts, Springs, etc.	1,368.95
Brake Beams	787.41
Track Bolts—49 Kegs (200 lbs. to keg)	145.31
Track Spikes—158 Kegs (200 lbs. to the keg)	315.20
Total	$6,757.36

Mr. McKelligon asserts that while the direct benefit of this reclamation has been great, it has likewise created a spirit of carefulness in using material on the line that is a great saving. Track men and station men are more economical and not so ready to discard material without a close examination as to its serviceability. Spikes are more closely picked over at the local tool house, pipe fittings on pipe and couplers and coupled parts are more closely scrutinized before they are condemned as useless. Tinware is being made over, for example, locally more than before. A. C. Carman at his mill has perfected a machine that makes car stakes from old piping butts and so on.

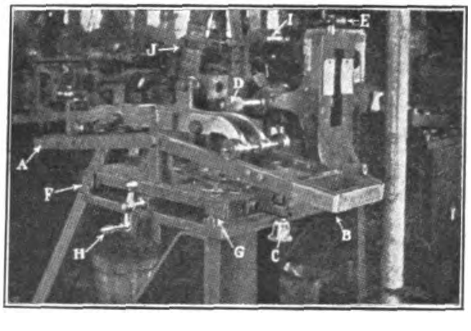
Reclamation is only possible with co-operation from every one. And reclamation consists not only in the recovery of good material from scrap, but also in the prevention of material that could be used in the locality being turned in to the supply car only to be again sent out somewhere else on the system. The principle of reclamation is not to "scrap" anything that is not scrap, and this applies to the actual use of any article in its present form as well as to making it over into another form.

It is surprising how much of second material has got good stuff in it; perhaps not serviceable in its present form but capable of being made over, wholly or in part, for some other use. Agents, trackmen, bridgemen and trainmen can save many dollars for the company if they will send in to the stores whatever they have that is no longer of any use to them. There may be something in the empty can or the old broom that is just what some other fellow on the other end of the system is looking for.

A New Machine for Grinding Locomotive Links.

WE are indebted to "Canadian Machinery" for the accompanying photograph of an interesting machine found in the shops of the Northwestern Railway at Chicago, which is used for grinding locomotive links and bushings. The illustration shows the machine set for grinding a block, and its particular advantages rest in the fact that there are no complicated cam movements or other attachments so common to machines made to perform similar work. While the feeding and rocking movements are done by hand, this is considered an advantage in the present form of machine.

The link or block to be ground is carried on a small wheeled truck, which is made to rock back and forth on the double-sloped track at A and B. The side A is stationary, but the side B may be adjusted up or down by means of the hand-screw C, to change the radius of grinding when desired. The grinding wheel D may be raised or lowered by means of ball crank E. The work truck, tracks and table, are carried on crossways F and G, and may be run out or in by turning ball crank H. A belt tightener at I keeps the belt taut at all times, and a suction pipe J carries off the dust. As both the link and its block can be ground on the machine without changing the track slope or radius, as accurate a fit as desired may be obtained.



MACHINE FOR GRINDING LOCOMOTIVE LINKS AND LOCKS.

Economy a la Louis Brandeis.

THAT railroad economy means more than so many empty words and that it is being practiced by the big roads systematically wherever possible is shown by one of the methods adopted by the Baltimore and Ohio Railroad in sending mail matter between departments over the system by train service.

The road has adopted a form of envelope which is not to be sealed and containing space for twelve addresses. When mail is received by a department, its address is struck off and the envelope saved for further use. In this manner an envelope was received in the vice-president's office on its twelfth trip after having traveled 20,000 miles. The office boy was sorry it could not be turned inside out and used twelve more times, as the paper was not torn.

The Rail Equipment of the New York Subways. Flange Lubrication.

THE following description of the rail equipment of the New York subways delivered in an address before the New York Railway Club on October 16th, by O. O. Dixon, assistant engineer of the Interborough Rapid Transit Company, will prove of particular interest to mechanical and operating railway officers in view of the enormous traffic of these subways, and the unusual strain and wear to which these rails are constantly subjected.

"The rails originally installed were the American Society of Civil Engineers 100-pound section, manufactured at Sparrows Point, Md. They were 33 feet long, laid on soft steel tie plates 5-16 inch thick and 4⅞ inches wide; they were laid with suspended joints, each joint being opposite the middle of the adjacent rail and spliced with 24-inch four-bolt angle bars.

"On curves the same construction was used, with the addition of an inclined guard rail which was bolted to the low rail about every three feet, using adjustable cast iron separators to take up the wear. The curves were laid to 4 feet 8½ inches gauge. The flangeways varied from 1¾ inches to 2¼ inches. For practically all frogs 1¾ inches was used. For all switches and on curves having a radius of 500 feet and above, a flangeway of 2 inches was used. On curves having a radius less than 500 feet the flangeway was 2¼ inches. The maximum super-elevation was 6 inches.

"The subway had not been long in operation when it was found that improvements should be made in the track.

"The inclined guard rail was so flexible that it concentrated the pressure on bolts causing frequent breakages and when the bolts held, the wheels were allowed to side slip between the bolts, due to the flexibility of the guard rail and considerable corrugation was due to this cause. This guard rail was replaced by a guard rail of the same section as the running rail, having one flange sheared off and the adjustable separators abandoned, using a one-piece separator to give the correct flange-way. The gauge of track on the radius, 4 feet 8½ inches for all curves was slightly widened on sharp curves depending above 500 foot radius, 4 feet 8¾ inches for curves between 200 feet and 500 feet, and 4 feet 9 inches for curves less than 200 foot radius.

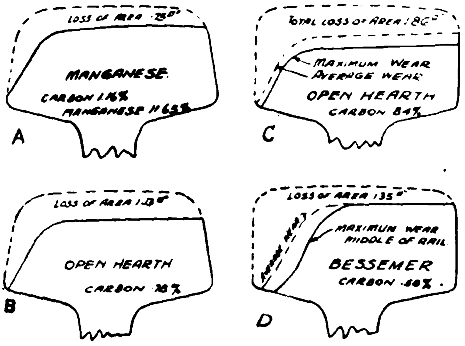
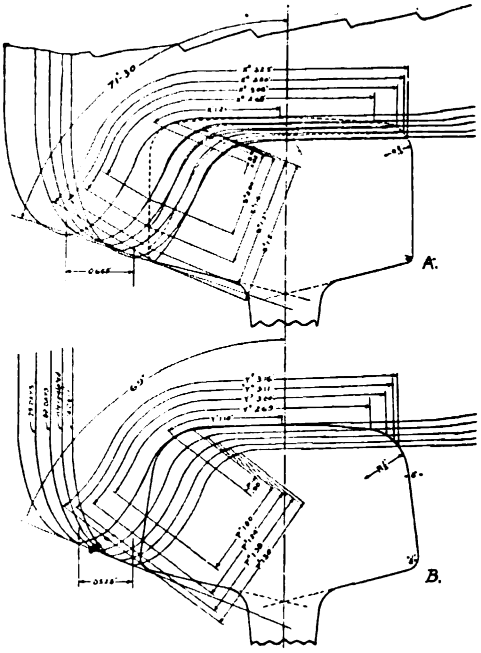


FIG. 3.



TIME		HORIZONTAL					VERTICAL					REMARKS
		STANDARD		PROPOSED		[illegible]	STANDARD		PROPOSED		[illegible]	
		S	WEAR	V	WEAR	[illegible]	S	WEAR	P	WEAR	[illegible]	
0 Days	1	.121	0	.110	0	0	.0125	0	.019	0	0	
29 "	2	.268	.83	.269	.150	.08	.090	.065	.100	.071	.056	
60 "	3	.306	.155	.300	.140	.015	.116	.054	.124	.088	.064	
87 "	4	.320	.125	.311	.117	.008	.137	.051	.138	.052	.002	[illegible]
114 "	5	.323	.115	.316	.114	.001	.150	.045	.150	.046	.001	

FIG. 2.

"These changes were found to increase the life of the running rails on sharp curves about 25 per cent.

"Before taking up the discussion of rail wear a brief description of the changes in chemical composition will be given. The original rails were manufactured by the Bessemer process and had a chemical composition as follows:

Carbon	.50 to .63
Mang.	1.00 to 1.10
Phos.	.08
Sul.	.05
Sil.	.07

"Chemical analyses were made of the worn rails to determine the cause of the rail wear and corrugations, expecting that it might be due to a lack of uniformity in the steel, but practically no difference in composition was discovered.

"The specifications were gradually changed to get a better wearing rail and one that would not corrugate. As renewals were made rails having a higher percentage of carbon were installed.

"Some averages of carbon and manganese, also deflection tests from 1907 to 1913 are as follows:

Brand		Analyses		Height of Drop	Deflection
Bessemer	1907	C. .59	Mn. .93	18 ft.	1.2 in.
"	1908	C. .602	Mn. .97	18 ft.	1.19 in.
Open Hearth	1908	C. .84	Mn. .74	16 ft.	....
"	1909	C. .77	Mn. .74	16 ft.	1.2 in.
"	1910	C. .78	Mn. .76	16 ft.	1.06 in.
"	1911	C. .799	Mn. .78	16 ft.	1.14 in.
* "	1912	C. .788	Mn. .88	15 ft.	.95 in.
"	1912	C. .79	Mn. .82	15 ft.	.93 in.
"	1913	C. .80	Mn. .85	15 ft.	.95 in.

*Rails treated with Ferro Titanium.

"This change in percentage of carbon was found to give better results. At present we specify carbon .75 to .90, with an average of not less than .80, and manganese .60 to .90.

"In studying the problem of rail wear it became apparent that the shape of the rail head was not suitable to our conditions, 20 per cent of the subway tracks being curves.

"Fig. 2 shows the result of this study. The shape of the rail head was changed from that shown in diagram A to that in diagram B during the year 1909—the object being to increase the area of contact during the first period of the rail's life, and also to decrease the tendency toward corrugation, by sloping the side of the rail head to conform nearer to the shape of the wheel. As will be seen from the table of Fig. 2, the vertical wear is slightly increased, and the horizontal wear decreased, thereby increasing the life of the rail.

"Fig. 3 is a comparison of rail wear and tonnage for Bessemer, Open Hearth and Manganese rails. This figure shows sections of worn rails on the high side of curve of southbound express track at Grand Central, and is typical of other curves, changing slightly with conditions.

"The following table gives a comparison of the life of the rails and tonnage passing over the tracks at the curve above referred to, having a radius of 220 feet, and a grade of 1.15 per cent down, and over which the average speed is 18 miles per hour:

Rail	Carbon	Tonnage	Loss of Area in sq. inch	Sq. inch loss in Sec. per million tons	Life
Bessemer	.59	12,873,436	1.35	.105	4 M. 10 days
Open Hearth.	.84	42,072,387	1.86	.044	12 M. 5 days
" .	.78	32,702,458	1.13	.035	7 M. 20 days
Manganese ...	1.16	67,952,189	.75	.011	14 M. 27 days

"The figures show that in a comparison of Bessemer and Open Hearth rail in general the wear is about 1 to 2 in favor of Open Hearth. The ratio of wear of Manganese to Bessemer is 1 to 9; the ratio of wear of Manganese to Open Hearth is 1 to 4½.

"The Open Hearth rails shown in diagram "C" are slightly better than the average. This is due to a higher percentage of carbon .84, as compared to an average of about .80 in other cases. Also more time had been spent in handling the metal before rolling than is customary.

"Bessemer rails being soft prove more liable to corrugation than the harder rails. As these figures show, the Manganese rail has proven satisfactory except for the fact that like all other rails it is liable to become corrugated.

"A peculiar instance of this occurred at Times Square on the southbound express track. One rail near the middle of the curve became corrugated, was taken out and placed on the tangent at the trailing end of the curve. The gap was closed by moving the rails together. The result was that all the rails became corrugated and the rail placed on tangent ironed out smooth. We have, therefore, found it better not to patch a curve by removing a single rail, but instead to renew several rails.

"Manganese rails are now being used on most of the important curves in the subway with somewhat varying results, but we believe that it pays to use Manganese if the price is not too high; for as can be seen from the table, renewals are less frequent.

"Owing to the fact that the subway passes so close to building foundations and in some cases through the building, rail corrugation is serious for in some cases it leads to vibration. In order to overcome the vibration the rails were frequently renewed and a system of spring track was installed, as shown at Fig. 3A. This is a section of the southbound express track at Times Square curve and is directly over the press room of the New York *Times*. Similar construction has been followed at other points of the subway and we believe this construction has helped to produce better results.

"We have very little trouble with rail failures in the subway and among the few cases that have occurred the Manganese rail failures are in the same proportion to that of the Bessemer and Open Hearth, as the tonnage of the various kinds of rails used. Should a rail fail during the rush hours we renew it with practically no interference with traffic."

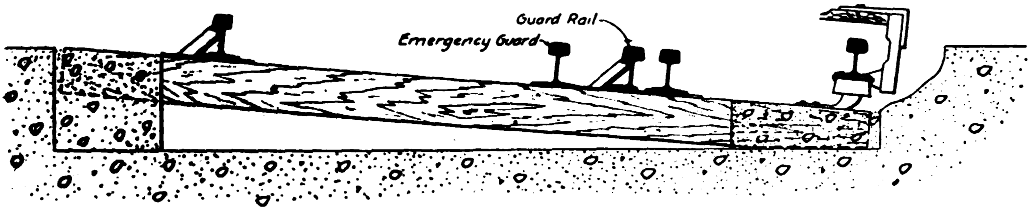
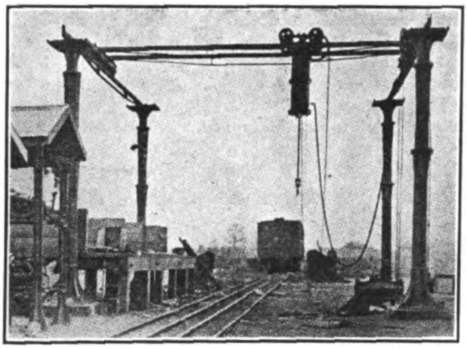


FIGURE 3A

Grand Trunk Yard Crane Built from Scrap.

RAILWAY scrap has been put to a number of novel uses in the past, but we doubt if it has ever before been employed for the construction of a yard crane. The accompanying illustration shows a small traveling crane erected at Allendale, Ont., by the Grand Trunk Railway for the purpose of handling the various heavier parts that must be cared for at a divisional point. The crane runway consists of four cast iron columns removed from the Company's old shops at Stratford, Ont., spanned by trussed rails which form the crane track. The crane itself also consists of a pair of truss rails suitably mounted at the ends of small carriages which run on the runway. A small crane carriage, operating on the crane rails, carries an air plunger hoist. The crane was primarily installed



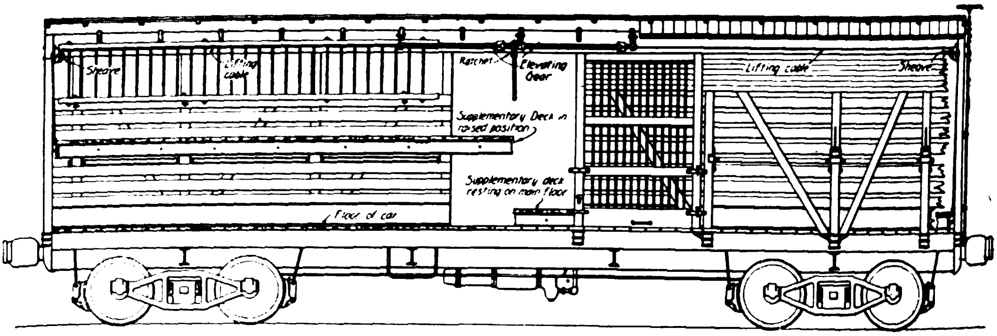
Grand Trunk Yard Crane at Allendale, Ont., Largely Constructed from Scrap Material.

for the purpose of lifting tender tanks from tender trucks for repairs, but has also proved to be useful in handling scrap material from the small shop trucks to the scrap bins as shown in the left of the illustration, for which we are indebted to the "Canadian Railway and Marine World."

A Convertible Stock Car.

THE Chicago, Milwaukee and St. Paul Railway is experimenting with a form of stock car having the supplementary deck arrangement in such a manner as to permit it to be lowered to a position where it rests on the main deck, thus allowing the car to be used not only for the transportation of cattle and other smaller animals, but also for the transportation of those various commodities that are occasionally shipped in the ordinary form of stock car.

The car with which the St. Paul is experimenting, has been so constructed that the supplementary deck has sufficient clearance on all sides to permit of it being elevated to the desired height for double deck loading. A shaft having right and left hand threads suspended from the roof at the middle of the car and operated by means of a ratchet lever, is employed to elevate or lower the deck. It requires but one man to operate it and a change of position can be accomplished in five minutes or even less. The accompanying elevation view gives a general idea of the car, which was fitted out at the St. Paul's shops at Tacoma, Washington.


Sheave
Lifting cable
Ratchet
Elevating Gear
Supplementary Deck in raised position
Supplementary deck resting on main floor
Floor of car
Lifting cable
Sheave

Elevation View of Convertible Stock Car Recently Built by the Chicago, Milwaukee and St. Paul Railroad.

Flange Lubrication.

AT its September meeting the Western Railway Club was addressed on the subject of "Flange Oilers," by Mr. F. W. Edwards, who said in part:

"The history of the flange oilers goes back to 1900, and I dare say the name 'Flange Oiler' confuses a great many. One of the first statements made to us when we say 'Flange Oiler' is that it will grease the tread of the driving wheel and cause slipping. The name possibly implies this, because to oil a surface suggests to make it slip, or pass easily over the opposing surface. The name might be put in the form, 'The Flange Friction Eliminator,' but that being too long a name to use, and 'Flange Oiler' answering the purpose, we adopted that name for the device.

"The original flange oiler was a piece of waste attached to the frame of the engine, with a piece of wire in a position so that it would come in contact with the driver wheel flange. When the engineer was oiling around he would drop some oil onto this waste; a small portion of this oil would reach the flange. The crudeness of this method was wasteful in the use of the oil, but some small benefit was derived.

"The next advance was a crude tin can, mounted on a bracket attached to the engine frame. From this can a pipe with a wick in the end was projected to a position over the driver wheel flange. After the can had been filled with black oil, the wicking was supposed to form a circuit between the oil in the can and the driver wheel flange. That helped the flange a little, but helped the driver wheels to a greater speed without advancing that engine and train any nearer to the division terminal.

"From this crude tin can arrangement the advancement was made with more devices of the same general character, and the addition of a flexibly mounted shoe that was always in contact with the flange.

"The use of the flexibly mounted shoe developed two noticeable facts. It was hard to keep the shoe in position and the oil was carried over the tread, due to the lateral motion.

"In 1904 the development reached a higher standard and a more perfect arrangement of the flange oiler. This year brought out what is sometimes called the 'Hydrostatic Flange Oiler,' so termed because it works on the condensation displacement principle. By putting this development through a refining process, the perfect working and result giving hydrostatic flange oiler was made a reality.

"To satisfy ourselves more thoroughly as to the safety connected with flange oiling we made a careful study of road conditions on both mountain and rolling country where sharp curves were a necessary part of the road construction. In many places the statement was made (before the flange oiler was applied) that the engines tried to take a short cut across the curve instead of following the track as a well behaved engine should. But since the application of the flange oiler they hardly knew a curve was there.

"The application of the flange oiler to high speed passenger engines running over this severe track gave the enginemen a feeling of safety and confidence they had never felt before.

"The inspection of the east end of the yard, where the flange oiler was not in use, showed the inner edge of the rail ball to be badly worn and the switch points were ground to a ragged edge and the crossovers badly cut. Evidence of the rail cutting was present everywhere in the shape of finesteel flakes. This evidence was not only on the ground along the side of the rails, but the engine frame was coated with the steel flakes because of the excessive rail and flange wear. From this we must conclude that the rail wear can be prevented by the use of the flange oiler with proper oil.

"It is a known fact that where there is excessive wheel flange wear there is also excessive rail wear, and the remedy for one is the remedy for the other. The flange oiler is the remedy and it has proven so effective that it would be a paying investment for the railroads if they equipped their engines with flange oilers for the saving of the rails only.

"Let us now investigate and see if the flange oiler is not also an important factor in fuel economy. The cause of flange wear is friction; the more friction there is between the wheel flanges and the rail the more train resistance is developed, and the higher this train resistance becomes the greater is the fuel consumption to haul a given amount of tonnage. This will all bear careful study, because the facts are there and it only requires some thought and application to bring them out. Some of the careful and observant engineers have discovered these facts because they have noticed the engines were not consuming as much coal and water after the flange oilers had been applied. It might be said that engineers in this class would make a showing without the use of the flange oiled. Truly they would make some showing, because they are careful and observant of all engine conditions and operations, and that is the very reason these same engineers would make a better showing and more saving if the engines were equipped with a device to prevent wheel flange friction. They would make a saving on their coal pile and that would make a big addition to your fuel economy record.

"The initial cost of a flange oiler which will reduce the cost of locomotive repairs and track maintenance, and show economy in fuel—which is necessary in the operation of railways to-day—is approximately $75 to $85 applied to a locomotive. The oil will cost from 16 cents to 18 cents per gallon, and one gallon will lubricate from 500 to 800 miles of engine service, which would make the cost about two cents or three cents per 100 miles for oil.

"The cost of turning the tires on the average locomotive and the value lost in service, which on an average is about $125 to $200 per day, will more than pay for the initial cost and application of the flange oiler, say nothing about the increased tonnage, fuel economy, derailments eliminated, saving on switch points and frogs, higher speed on curves with the greatest element of safety, and more than doubling the life of rails on curves.

"In conclusion, it is necessary to outline some of the important points that should be considered, if you contemplate the application of flange oilers. Purchase the best flange oiler possible and one that is not an experiment. Choose one that will deliver a heavy asphaltum oil onto the flanges and not onto the tread of the wheel. If grease or greasy oils, paraffine oils, or if crude oils that have a grease or paraffine oil base, are used, they will spread to the wheel tread or top of the rail and cause drivers to slip, and you cannot expect to secure the results sought for.

Painting of Steel Car and Locomotive Equipment.

THE members of the Central Railway Club listened on November 13th, to an interesting address by Milton L. Sims, special railway representative of the Sherwin-Williams Company, of Cleveland, Ohio, on the: "Painting of Steel Car and Locomotive Equipment." Mr. Sims considered separately the steel coach, the steel freight car and the locomotive.

In preparing the exterior of a steel coach for painting he considers the sand blast as the safest and most economical method. For the interior of the car, he recommends the use of linseed oil and benzine or gasoline in the proportion of one part of the oil to two parts of the benzine applied with a brush rubbed down with emery cloth or paper. The sheet steel used on the interior being of lighter weight and finer texture, does not, in his opinion, need the sand blasting to get excellent results. The priming coat should be applied as soon as possible after the surface has been cleaned and this applies particularly to the outside, as corrosion often starts a few hours after the sand blasting process has been used. In describing the various coats and their method of application, Mr Sims spoke as follows:

"The priming coat is the most important one of any that is to follow, except the coats of finishing varnish, and too much care cannot be exercised to see that it is done thoroughly, brushed out evenly and every bolt head and joint coated perfectly, using suitable brushes for the purpose. This priming coat must be made from suitable pigments and carrying vehicles, finely ground and thoroughly incorporated together to work freely and spread smoothly under the brush, dry hard, but elastic enough to safely withstand the contraction and expansion of the steel surface, which varies greatly in different sections of the country. The solid through trains running from the ice and snow of the North to the tropical climate of the South, has a marked influence in producing cracking and disintegration of paint and varnish films as applied to steel cars much more than wooden cars.

"When this priming coat has dried safely, the next step is to hard putty and glaze coat over all rough places and this takes us to the second coat or brush surfacer, which is designed to fit with the priming coat. This material must also be finely ground, work and spread easy over large surfaces. It must dry hard, but elastic, and be made from well known and selected materials. The next step is to apply a much heavier bodied surfacing material, which is then knifed off, leaving a very smooth surface, which requires very much less rubbing to bring the surface up ready to receive the color coats. The old method of using block pumice stone and water, is dispensed with, and a more modern and safer method of rubbing the surface down smooth by using emery cloth, in connection with equal parts of raw linseed oil and benzine, and then washing or wiping off with rags or waste, and clear benzine or gasoline. This method of surfacing does away with all danger from moisture and prevents the starting up of corrosion where any sharp edges or bolt heads may be cut through to the steel. The oil forms a good sealer for the more or less porous surfacing material and forms a safe foundation for the succeeding color and varnish coats.

"One coat of specially prepared car body color is now applied. When this is dry, a second coat of specially prepared car body color is applied, which is of an elastic enamel quality, dries hard with a semi-gloss, but makes an elastic surface suitable for striping and lettering. After which two coats of durable outside finishing varnish are applied, and the outside of car is ready for service.

"The same priming material shall be used on the interior surface and then followed up with the second coat of brush surfacer. The heavy coat of knifing material can be dispensed with and after the rubbing with emery cloth, oil and benzine has been finished, then follow with a suitable ground work for graining in imitation of natural woods, after which apply two coats of elastic rubbing varnish. Rub to a dead finish with rubbing oil and pulverized pumice stone, or polish if desired. When solid colors are used on head and side linings, an option is given for the use of special enamels, or quick drying elastic headlining colors to be striped and varnished over."

Mr. Sims has prepared the following schedule, which he believes can be applied to advantage in painting steel passenger coaches:

SCHEDULE FOR PAINTING EXTERIOR OF STEEL PASSENGER COACH.

First day.—Apply priming coat.

Second day.—Hard putty and glaze all rough and uneven parts of surface.

Third day.—Apply coat of brushing surfacer.

Fourth day.—Apply coat of knifing surfacer.

Fifth day.—Rub out with emery cloth, using half and half raw linseed oil and benzine, instead of block pumice stone and water.

Sixth day.—Apply first coat of car body color.

Seventh day.—(If Sunday), drying.

Eighth day.—Apply second coat of car body color enamel.

Ninth day.—Stripe and letter.

Tenth day.—Apply first coat durable outside finishing varnish.

Eleventh day.—Drying.

Twelfth day.—Apply second coat of double outside finishing varnish.

Thirteenth day.—Car is completed.

LOCOMOTIVE PAINTING.

The method used in painting a locomotive, differs very slightly from that of a steel coach. The same primer and surfacing materials are used and rubbed out in the same manner. Then the color coats which are usually black, are applied.

For this purpose an enamel black is used on which the lettering is done and one coat of durable finishing varnish is usually applied on the water tank or tender, cab, steam dome and sand box, steam chest and cylinder casings, etc., for best work. The enamel black should be made from selected materials which are known for their wearing and heat-resisting qualities. If the surfacing materials are made too rich with oils, blistering on the heated surfaces will often result.

Speed is demanded in locomotive painting, as each day that a locomotive is kept out of service, represents so many dollars of earning power for the railroad company. The machinists, boiler makers, pipe fitters, etc., usually get all the time and the painters get what is left, but it cannot be helped, as time means money here as elsewhere. The actual time necessary to turn out a satisfactory job, depends on shop conditions. Two and often three operations on the schedule can be carried out safely in one day.

SCHEDULE FOR PAINTING A LOCOMOTIVE.

Assuming that the same care has been taken in removing all grease, scale and corrosion from the surface to be painted, proceed as follows:

First day.—Apply priming coat of special locomotive primer.

Second day.—Hard putty and glaze coat all rough and uneven surface. (This does not apply to trucks, framework, etc.)

Third day.—Apply brushing and knifing surfacer to water tank or tender, cab, steam dome, sand box, etc.

Fourth day.—Rub out surface with emery cloth, using half and half raw linseed oil and benzine. Wipe off dry with rags or waste and clean benzine, being careful not to use too much benzine. Follow up with coat of black enamel. On best work a coat of flat black is applied over all surface, except trucks, frames, etc., before the black enamel coat is applied.

Fifth day.—Letter and finish with a coat of durable locomotive finishing varnish.

Shorter and quicker methods are not reliable or recommended, except for re-painting and repair work.

PAINTING STEEL FREIGHT CARS.

The methods of painting steel coal cars has changed very materially in the last few years. Formerly all coatings were made very elastic and very little attention was given to make the first or priming coat, dry any different from the last or finishing. Research work on this matter has proven that the method was wrong and that the first or priming coat should, by all means, be constructed so as to dry hard and elastic, using specially treated vehicles for the purpose and such pigments as will be neutral and last the longest. The finishing coats made more elastic and to have more gloss and moisture-resisting qualities.

The reason for the priming coat being made to dry harder and with less gloss, is that coal cars are subjected to rough usage while being loaded and unloaded. Large lumps of coal striking the sides of the cars glancing blows, soon knock off much of the painted surface when the elastic coatings are new.

Grand Trunk Adds Correspondence Course to Training Apprentices.

MR. W. D. ROBB, the general superintendent of motive power, has some six hundred apprentices in his department of the railway's work, the young fellows being trained in the various locomotive shops of the company at Montreal, Stratford, Battle Creek and other points. The benefits of this training are such that boys are sent from all parts of the American continent, and even from Europe to take their apprenticeship here. If they pass their entrance examination they are given a trial of from two to three months in the shops and if satisfactory are asked to sign indenture papers binding them for the period their trade calls for—machinists for five years, patternmakers and boilermakers for four years.

During this apprenticeship the boy has to attend classes arranged by the company and is taught mechanical drawing and practical mechanics.

Examinations are held periodically to test the knowledge of the boys and at the end of the term a final examination is arranged for the whole system, the marks being compiled and the station having the highest percentage receiving a cash prize donated by the company. Individual prizes are also given to the boys.

This year it has been decided to improve the opportunities of the apprentices at small stations where it has not been possible to keep instructors. Correspondence courses, mapped out along the most improved lines, have been adopted for this purpose and the boys will be in touch in their theoretical studies with headquarters in Montreal. Text books have been compiled by the company both in drawing and mechanics suitable to the requirements and these have been made as practical as possible, so that the practical work may line up with the theory taught.

A Safety Track Spike.

THE Railway Safety Spike Company, of Richmond, Va., has placed a new safety spike on the market, which, it is claimed, presents a greater resistance to side thrust and vertical pull than the ordinary spike. It is at the present time, being tried out by a number of roads including the Chesapeake and Ohio, the Seaboard Air Line and the New York, New Haven and Hartford.

The distinguishing features of this spike are the two projecting wings on the sides of the body to increase its resisting power to the lateral movement of the rail, and the notches on the front and back edges below the wings to increase its resistance to an upward pull. It is stated that the displacement of fiber by this spike is only .012 cu. in. greater than that of the ordinary track spike, and that the resistance to lateral movement is increased more than 300 per cent.

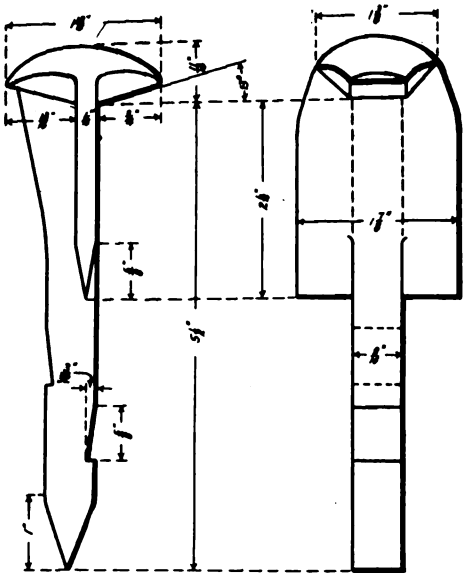


DIAGRAM OF SAFETY TRACK SPIKE FOR WHICH IS CLAIMED A GREATER RESISTANCE TO SIDE THRUST AND VERTICAL PULL THAN THE ORDINARY SPIKE.

The new spike is made of low carbon steel, ranging from .12 to .20 per cent of carbon, and having a tensile strength of 5,500 to 6,500 lb. per sq. in. The spikes are made by the drop forge process, giving uniform strength, particularly at the throat where the common spike is apt to be weak on account of its manufacture by the upsetting process. The throat is reinforced by additional metal on the back just under the head, giving it added strength when reversed to be used in the slot of an anglebar.

It is thought that the advantages of the new spike will be most fully realized on curves and at switches where rail spreading is most common. It is declared that the use of these spikes will allow rail-braces to be eliminated at such points, saving the cost of these devices and reducing the number of spikes about sixty per cent. The spike can be applied with a maul and pulled with a clawbar, in the same manner as an ordinary spike.

A special tie plate for use with these spikes, if tie plates are desired on curves, has also been designed by the same Company.

Southern Pacific's Safety Campaign.

THE Southern Pacific, during the past ten months, has given instruction in "safety first" to many thousands of people, not employes—citizens in the larger towns on its lines; and at the same time has advertised its own efforts in the same line by exhibiting models of semaphore signals, hiring rooms for the purpose and employing a regular lecturer. The visual instruction in cautiousness is conveyed by means of large photographs, about a hundred of them displayed in a booth; and whatever urging may be necessary to induce people to walk in and examine the pictures is accomplished by means of the semaphores which are so manipulated as to be an attraction even to the careless.

The pictures illustrate those accidents commonly involving the public, such as trespassing on tracks, automobile drivers approaching crossings not under control, and passengers unnecessarily assuming dangerous positions on trains in motion. In addition to these the results accomplished by the company's "safety-first" organization are illustrated by views of machinery before and after safeguarding and other well known precautions.

All of the pictures, together with statistical accident charts, are displayed in a portable booth 24 feet long, 15 feet wide and 14 feet high. The booth is a counterpart of the one used for the Southern Pacific display at the International Exposition of Safety and Sanitation, held in New York last year. The exhibit travels on an itinerary similar to those of theatrical companies. Advance press notices are published, giving the date and purpose of the exhibition. After the installation of the exhibit, accounts showing accident statistics and other interesting narratives are published in the newspapers. It requires but a day to install and a half a day to dismantle the booth. Where available a vacant store in the business district of each town is selected for displaying the exhibit.

The display of the miniature model of the automatic block and interlocking signals is popular. The public generally is interested in learning the manner in which signals operate and the demonstrations attract many. At the conclusion of each signal demonstration attention is directed to the accident pictures and a brief statement of the purpose of the exhibit is made by the demonstrator in charge. Few people leave the booth without studying the pictures and descriptive data.

A chart setting forth statistics relevant to the carelessness of the great majority of people when crossing tracks at grade is also displayed. These figures, compiled from tests made last year by the Southern Pacific, show, as has been shown elsewhere, that exceedingly few persons stop and look in both directions before crossing tracks, 69 per cent of automobile drivers observed took no precautions whatever, neither stopping nor looking in either direction. Emphasis is given to the fact that the greater proportion of trespassers killed are wage earners and not hoboes, as is commonly supposed.

The exhibit has been entour since January of this year and with the fulfilment of the itinerary it will have been displayed in all the larger towns on the Southern Pacific System, and will have been attended by 100,000 people; and approximately $5,000 will have been expended in its management.

Electrical

Another New Electric Alpine Railway.

By Marie Widmer.

AT 6000 feet above sea-level and at a distance of 18½ miles from Chur, the historic capital of the Grisons, lies one of the most enchanting of the Swiss Alpine resorts—Arosa. Meadows resplendent in tender green and profusely interwoven with floral designs form a luxurious cushion on which this lovely jewel is reposing, right in the midst of a setting of fragrant pine-forests and a glorious cluster of snow-crowned Alpine peaks. It is a spot which is well known for its salubrious climate, its even temperature and abundance of sunshine—advantages which have rapidly made it famous as a health and pleasure resort.

Arosa is a veritable gem of tranquil beauty. It is far distant from the nerve-racking noise of the every-day traffic and far away also from the "beaten paths," so much dreaded by the carefully exploring tourist. In summer it has been the picturesque diligence which afforded a means of communication with the outer world and in winter, when King Zero laid down his thick carpets of snow, it was the merry tinkling sleigh which climbed from the valley to this sunlit realm glistening in its array of crystals and ermine.

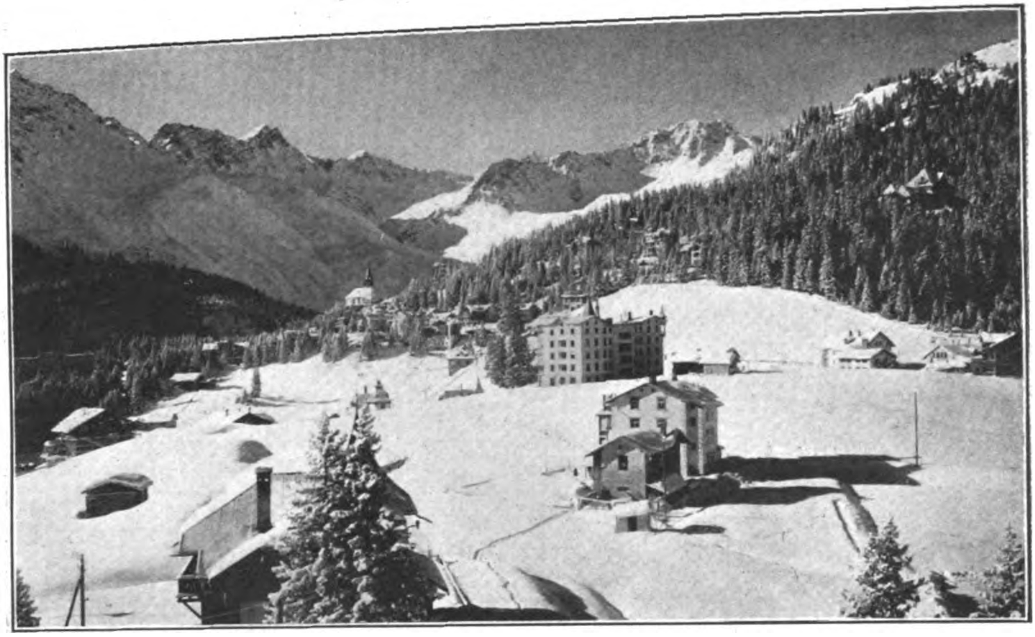
Modern conditions have, however, called for an improvement. The growth of the community which now presents that familiar and pleasing picture of humble, nut-brown chalets and elegant hotels, made swifter transportation a necessity.

It required a great deal of hard work and eloquent persuasion on part of the originators of the project, until they finally succeeded in 1912 to form a company, with the co-operative support of the Canton of the Grisons, the City of Chur, the Rhaetian Railway and all the communities along the line to be constructed. In the autumn of that year the great work was started and it is anticipated that the railway will be opened for traffic within a few weeks, in spite of the present conditions in Europe.

The starting point of this newest electric Alpine railway is in closest vicinity to the railroad station of Chur, situated at an altitude of 1925 feet above sea-level. The terminal of the line which is a meter gage, adhesion railway, is on the border of the Obersee in Arosa at an altitude of 6000 feet above sea-level.

Following the carriage road along the swift river Plessur, we immediately begin to climb, through wood-clad heights. Maladers, Castiel and Luen, three typical Grisons villages greet us with the welcome smile of the Schanfigg Valley which we have entered. The little communities lie scattered over the mountain-side, but each is the proud owner of a brand new railroad station in the dainty chalet style, so that the invasion of this blissful country by the railway does by no means impair its glorious natural beauty.

The valley begins to assume an aspect of wild grandeur. Gorge follows gorge and the foaming waters of the Plessur thunder in wild anger below. Bridge follows bridge and although the river is crossed but once—at Langwies, there are between Chur and Arosa not



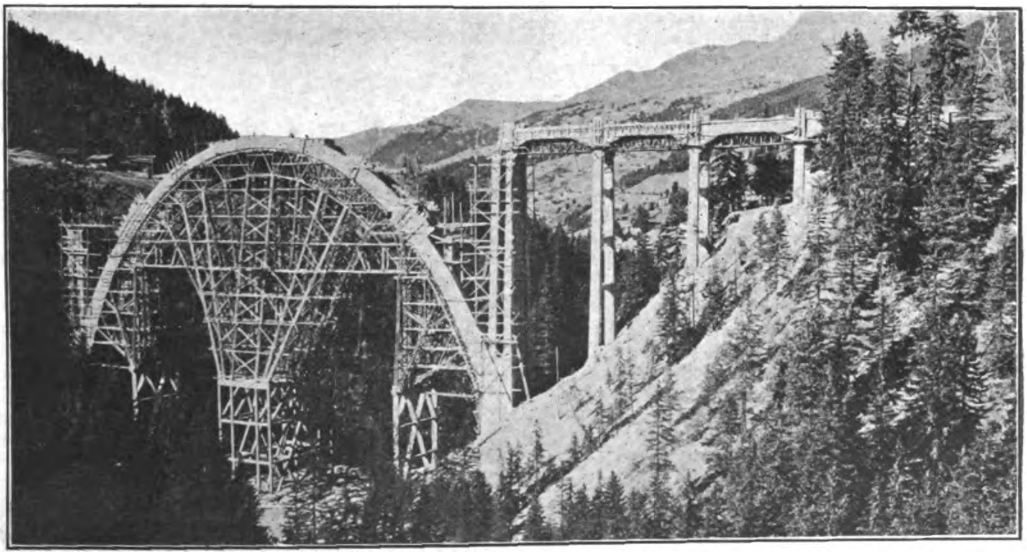
Arosa, the Swiss Alpine Resort and the Terminal of a New Swiss Electric Railway.

fewer than 27 bridges of stone, three of iron and two of concrete, as well as 19 tunnels with a total length of 7,800 feet.

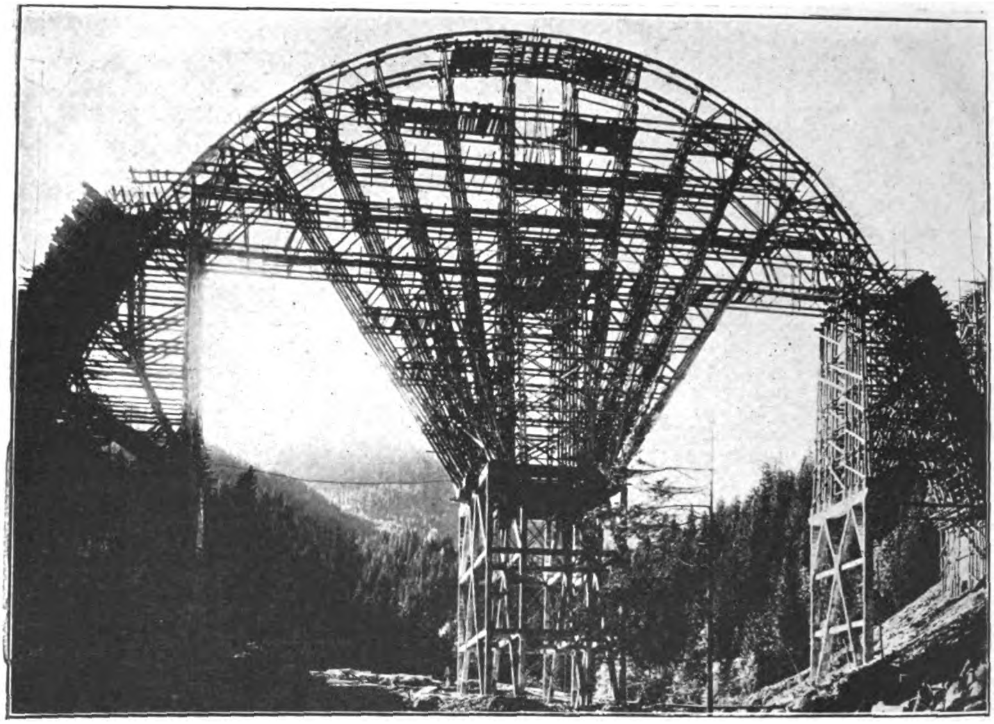
Before we reach the village of Langwies, we perceive in the distance the outline of a boldly constructed arch. This is the viaduct of Langwies, the masterpiece of the Chur—Arosa railway and one of the most remarkable bridges in the whole of Switzerland. The main arch of this bridge, which is the second longest masonry arch in the world, has a clear span of 315 feet and a height of 140 feet. The viaduct itself measures 960 feet in length and shows a grade elevation of 207 feet above the valley.

The material of the arch and the pillars contains portions of iron, which are practically forming the invisible skeleton of the same; the principal building material consists however, of a combination of gravel, cement and sand, the durability of which has been found far superior to stone. While a stone bridge necessitates a very solid and heavy construction, a structure of this material can be much lighter. The viaduct of Langwies with its gracefully curved arch may look frail to many, yet with the new and scientific distribution of the building material, it has been made perfectly safe and strong.

The Calfreis viaduct, between Maladers and



Gigantic Viaduct Near Langweis, Switzerland, on the New Electric Railway Between Chur and Arosa.



Closer View of the Gigantic Viaduct Near Langweis. This Will be the Largest Masonry Arch Thus Far Constructed in Switzerland.

Castiel, is another remarkable feature of the line. Two central arches with a respective span of 83 feet and 60 feet have been built of concrete blocks and the four lateral arches of 40 and 20 feet each are of tamped concrete.

At Langwies the Schanfigg valley makes a sharp curve to the south. Sombre pine-forests climb from the turbulent riverbed far up into the barren regions of rocky cliffs. To our left towers the Thiejerfluh, famed for the number of avalanches which precipitate themselves down into the valley like gigantic volleys of dust. A melancholic stretch of land many believe, but they are unaware of the existence of the flowery pastures which are hidden higher up, with tiny lakes dotted here and there and with the fair "Alpenrose" blooming in bewitching profusion. A visit to this idyllic spot is, however, an easy matter from Arosa, as a well kept bridle-path leads by way of these pastures to the "Rote Tritt"—a favorite point of view, and on to Tschiertschen and Chur.

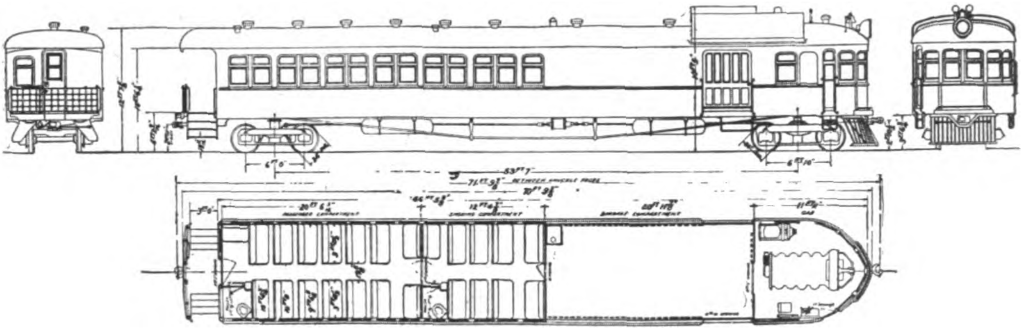
Ruti, the last station before Arosa beckons us. To those who are acquainted with this district in winter it is a well known friend, it being the finish of the famous bobsleigh run Arosa-Ruti. Once more the train disappears in the forest, but it is only for an instant and presently we are surprised with the dazzling vision of a majestic mountain pyramid—the Schiesshorn, and a glimpse into a valley of entrancing beauty, the Welschtobeltal. A last short tunnel and the village of Arosa is spread before us.

The journey which took six hours by the "old way" requires much less than half the time by the "new way" and the traveler still gets the full benefit of the view. The Chur-Arosa line is not what could be termed as merely a "tourist railway." It is a line which will bring another of the exquisite side valleys of the Grisons in closer touch with the world. And especially in winter-time it will be hailed as a wonderful convenience by many who may not have felt equal to the long drive or whose limited time may not have permitted such a side expedition by diligence or sleigh.

New Construction in Gas-Electric Motor Cars.

THE Spokane, Portland and Seattle Railway has contracted with the General Electric Company for a gas-electric motor car having a baggage compartment about twice the usual length, in order to supply sufficient space for the large quantity of express handled particularly during the fruit season. This car is to be placed in operation between Portland and Ranier, Ore., the service for which it is intended being performed at the present time by steam trains. This service will require four single trips a day, or a total distance of 183 miles and the new gas-electric car will be required to haul regularly, one twenty-five ton trailer, seating sixty passengers, and, during times of heavy traffic, a second trailer of the same weight and capacity.

The dimensions are 70 feet 11⅜ inches over bumpers by 10 feet 6⅜ inches wide over all. It weighs approximately 51 tons and has a seating capacity for 68 passengers. The interior is partitioned into four compartments. The cab in front containing the power plant apparatus meas-



General Plan and Elevation Views of New Gas-electric Motor Car for the Spokane, Portland and Seattle Railway.

ures 11 feet 11 inches long; next is the baggage room, 20 feet 10⅞ inches long; then the smoking section, 12 feet 6 inches long; and the passenger compartment 20 feet 5⅞ inches long.

Electric Car Lighting.

THE American Electric Railway Association held its thirty-third annual meeting at Atlantic City from October 12 to 16 inclusive. In the engineering section of the Association, there were a number of reports and papers presented that possessed matters of interest to the officers of steam railways though they dealt primarily with those pertaining to the electric railway. The papers presented were as follows: Constitution and By-Laws; Power Distribution; Standards; Electrolysis; Accident Prevention; Block Signals; Transportation Engineering; Equipment; Buildings and Structures; Life of Railway Physical Property; Engineering Accounting; Power Generation; Way Matters; and Heavy Electric Traction.

The report on the treatment of car lighting in so far as it relates to the lamps used, is of particular interest to railway officials, and we quote therefrom as follows:

"The regulation of a carbon lamp is very poor, the intrinsic brilliancy of the filament varying considerably with slight changes in the current passing through it. With varying voltages at the lamp, the intrinsic brilliancy of the filament is constantly varying, and therefore the amount of light obtained from the lamp is also varying, as the amount of light varies directly in proportion to the brilliancy of the filament. The character of the carbon filament is such that its electrical resistance varies with its temperature. As the carbon is heated, its resistance gradually drops, permitting more current to flow through it, this change in resistance occurring only through a limited range, but sufficiently to materially affect regulation. As the voltage on the lamp drops, the current through the lamp drops also, reducing the temperature of the filament. The filament on cooling increases in resistance, and thus causes an even greater reduction in the current passing through it, which explains the fact that with a slight change in voltage there is a great change in the amount of light emitted by the lamp.

"The efficiency of the carbon lamp is low, but until the advent of the tungsten lamp, the efficiency of the carbon lamp was as good as could be obtained.

"The life of the carbon lamp is of a more or less indeterminate length, depending largely upon the definition of life. A carbon lamp will often continue burning for an indefinite period, during which the filament is undergoing changes which materially reduce the amount of light obtained from the lamp. Among other things, the carbon from the filament is gradually oxidized and deposited on the inside of the bulb in such a way as to cloud the glass and cut down the amount of light emitted to a considerable extent. After the carbon lamp has been in service from 1,000 to 1,500 hours, it has usually depreciated to such an extent as to warrant discarding.

"The Mazda lamp utilizes a tungsten filament, which does not vary in resistance with temperature changes to any such degree as does the carbon filament. In fact through a certain range of temperature, there is a slight increase in resistance with increase in temperature, consequently the light obtained from the lamp does not change as much with changes in voltage as is the case with the carbon lamp. This is a great advantage under variable voltage conditions, as the illumination of the car can be maintained more constant.

"The Mazda lamp is a more expensive article to buy than the carbon lamp, but the saving in current to be obtained may compensate for the increased cost of replacements. The life of the Mazda lamp is assumed to be 1,500 hours of burning, as after this point is reached the light produced drops below 80 per cent of normal, which value has been determined as the economical point to discard a lamp.

"There are two important reasons given for using reflectors in car lighting work, one of which is that by means of proper design a reflector can be made to hide the lamp filament from the eyes of passengers, and the other is that the efficiency of the lamp may be increased from 50 per cent to 100 per cent, depending upon the type of reflector used. Either reason by itself appears sufficient to warrant the use of reflectors, the main requirements of which are as follows in order of importance:

1. Hiding lamp filament.
2. Correct distribution of light
3. High efficiency.
4. Good appearance.
5. Economy.

"The principal types of reflectors are:

1. Prismatic clear glass.
2. Heavy density opal glass.
3. Medium density opal glass.
4. Light density opal glass.

"Prismatic clear glass reflectors are the most efficient, as with them it is possible to redirect the light in any direction desired, which permits of accurately meeting each lighting requirement. Their first cost is comparatively high, but is quite often justified where efficiency is of first consideration.

"Opal reflectors vary in efficiency, the heavy density being the most efficient and productive of the best light control.

"The following table shows the efficiency that may be expected from these various types of reflectors:

Table I—Efficiency of Various Types of Lighting Units.

Equipment	Foot candles per watt per sq. ft.	Watts per candle
Bare carbon lamp	0.44	3.75
Bare Mazda lamp	1.43	1.16
Light density opal reflector with Mazda lamp	2.22	....
Medium density opal reflector with Mazda lamp	2.60	....
Heavy density opal reflector with Mazda lamp	3.16	....
Prismatic clear reflector with Mazda lamp	3.20	...."

Electric Headlights for Southern Pacific Locomotives.

WITHIN a short time, all the locomotives in the freight and passenger service on the Pacific system of the Southern Pacific Company that have been equipped with gas headlights, will be operating under electric headlights either arc or incandescent.

The new incandescent lamp has a very powerful source of light, not more than three-sixteenths of an inch in diameter and is considered more efficient and satisfactory than the arc light. The energy consumed by this lamp is less than that consumed by two ordinary sixteen candle power lamps and yet when properly focused in the reflector, produces a cylinder of light of more than 700,000 beam candle power. When once focused the lamp stays in focus until burned out, its life being approximately three months.

Tests on several of the divisons show that with the locomotives running at high speed dark objects may be discerned at a distance of 1,800 to 2,000 feet away. The electric energy for the new headlight is derived from a storage battery mounted on top of the locomotive boiler. Charging stations are provided at the engine turning points where the batteries are removed and recharged.

The expenditure by the Southern Pacific for the new lights will total over $200,000. Electrical Engineer A. H. Babcock has supervised the installation.

The company's engineers are now developing the automobile type of electric generator to a size suitable for locomotive purposes. When this is accomplished there will be no further need for the battery charging stations.

Convention of Electrical Engineers.

THE seventh annual convention of the Association of Railway Electrical Engineers was held in Chicago the closing week of October. A report of unusual interest was that of the Committee on Data and Information, and covered the results of an effort to compile complete car lighting and other electrical statistics of the various roads of the country. The report showed that the total number of electric lighted cars increased from 11,017 in 1911 to 18,936 in 1914. The Committee found that the division of electric lighting units in railway service was as follows:

	Total No. Reported	Per Cent
a. c. Arc Lamps	9,600	21.0
d. c. Lamps	8,096	17.7
Magnetite Arc Lamps	1,429	3.1
Flaming Arc Lamps	1,252	2.3
500-watt Tungstens	734	1.6
400-watt Tungstens	1,576	3.5
250-watt Tungstens	11,205	24.7
150-watt Tungstens	9,030	19.8
Nitrogen Filled Tungstens	489	1.7
Cooper-Hewitt	1,516	3.3
Quartz Tube	55	.1
Nernst Lamps	570	1.2

The following interesting table shows the increase in car lighting equipment in the United States and Canada during the past three years according to the character of the equipment employed:

Total Number	1911	1912	1914	Increase in 3 Years
Electric Lighted Cars	11,017	13,115	18,936	71.8%
Cells Lead Battery	202,744	222,989	259,842	28.8%
Cells Nickel Iron	.....	4,855	31,883	.....
Straight Storage Cars	1,372	2,078	2,707	97.1%
Headened Generator Sets	192	291	273	42.2%
Axle Generator Cars—60 and 30 Volt	5,900	7,198	12,458	111.5%

The Committee on Electric Headlights reported in part, as follows:

"During the last two years more locomotive headlights have been installed than in all the previous years of electric headlights. Most of these equipments were installed in compliance with the laws of various states. As the interpretation of these laws has caused quite a difference of opinion, it was only natural that the installations were not made until near the expiration of the time set by the law. This resulted in the equipment being installed in a somewhat haphazard manner, by inexperienced men, and lack of uniform methods."

The point referred to in the foregoing quotation, the uncertainty and ambiguity of the state laws upon the subject, was one around which a good part of the discussion which ensued revolved; although by the nature of the case, nothing conclusive could be agreed upon.

One of the most interesting features of the convention was the reading of a paper on: "The Wireless Telegraph and the Wireless Telephone as an Adjunct in the Operation of a Railroad," by Dr. Frederick H. Millener, describing in a general way the experiments which he has been conducting for seven years past under the direction of the Union Pacific. These were directed, in the first instance, toward the perfecting of a system of cab signaling; during the course of which work an industrial truck which attracted a good deal of attention throughout the country was propelled by storage battery about the shop yards at Omaha, actuated and controlled by wireless signals from a nearby station. Following this, Dr. Millener's work has in view the installation of a system of wireless telegraph, with stations at North Platte, Neb., and Green River and Cheyenne, Wyo. The wireless telegraph system was perfected some three years ago and has been ready to be installed; although as Dr. Millener says, "for various reasons, not connected with the wireless, it has been postponed." The most recent work of Dr. Millener has been directed toward a system of wireless telephony, and this apparatus is now stated to be beyond the experimental stage. It comprises now, in the one outfit, an intercommunicating telephone from car to car in the same train, long distance telephone by wire when the train is stopped at a station; and when the train is in motion between stations a wireless telephone affording communication with the train ahead, the train behind or the station.

The conclusions of the committee relative to the economics of electric traction, were as follows:

"Various reasons for the electrification of portions of steam railroad have been given and in many cases the necessities of the situation governed the decision. As an alternative to double-tracking, tunnel enlargement, grade reductions, increase in terminal space, or other large expenditures required either by traffic conditions or legislative enactment, electrification will usually show an economic saving. That is, the recognized decrease in maintenance and repair cost of electric locomotive equipment, saving in crew wages, and reduction in cost of power will more than counterbalance the additional operating cost of electric transmission and distributing systems. In these cases the first cost of electrification is offset by the saving in not making the other improvement. In this connection it should be borne in mind that the first cost of electric locomotives—which will amount to about one-third of the total cost of an electrification including power plant—should not be treated wholly as an electrification investment, because they can usually be considered as a normal addition to the motive power equipment of the road. In any case there should be credited against the cost of the locomotives the cost of equivalent steam locomotives which do the same work, assuming that the railroad is large enough to absorb the steam locomotives displaced.

"The cost of handling freight trains can usually be reduced by the higher schedule speed obtainable due to the overload characteristics and high tractive effort at low speeds of electric locomotives on grades, and the larger train units which can be operated, thus reducing the number of trains for a given traffic. It is also a fact that electric locomotives can make from 50 per cent to 100 per cent more mileage per year than steam locomotives due to facility of operation, less round house time and fewer major repairs.

"Railroad electrification for straight economy over steam operation, where there are no contingent improvements saved which can be credited to cost of electrification, will not usually show sufficient net saving in expenses to provide for interest on the investment and amortization. Of course all conditions must be taken into account and a detailed study made in any particular case to arrive at a final answer as to the economies. For instance, as a power plant represents about one-third the cost of an electrification, the purchase of power may affect the result and an unusually cheap power supply, such as may be obtained from hydro-electric developments in certain localities, will often make electrification prove economical.

"Generally speaking, the savings in operation due to electrification of a steam railroad result from two principal causes; first, that due to reduction in fuel consumption, locomotive maintenance and repairs, engine house expenses and other detail costs; and second, that due to reduction in number of freight trains to handle a given traffic.

"The reduction in the amount of coal hauled for locomotive purposes, where a steam plant is substituted, would materially affect the traffic operation. This hauling of coal would be entirely eliminated where power was purchased or generated in hydro-electro plants.

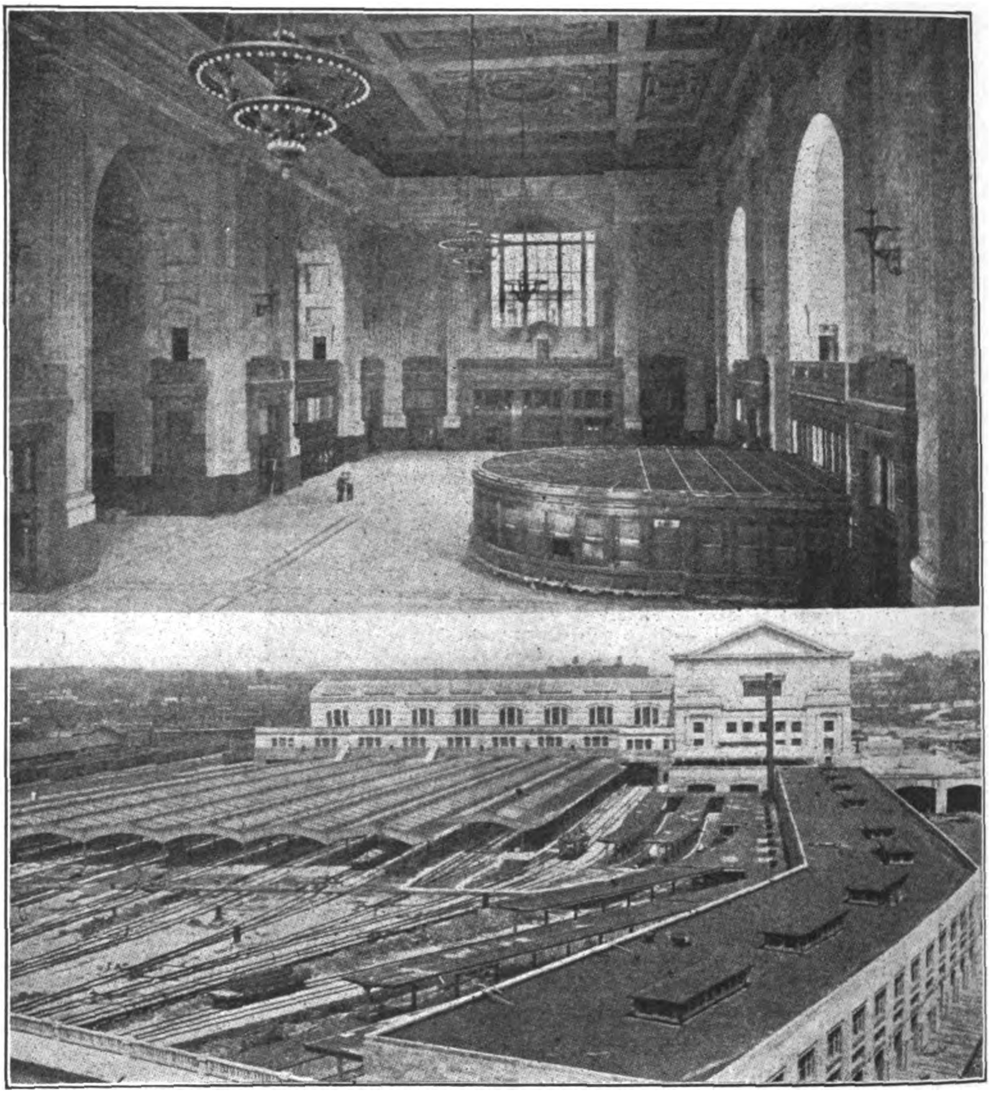
"Electric operation of passenger trains provides cleaner and faster service which is attractive to the public and results in greater traffic, increasing the gross earnings."

Terminal Improvements

Completion of the New Kansas City Union Passenger Station.

THE new Union Passenger Station at Kansas City, Mo., opened for traffic on November first, and constitutes one of the finest railway terminals in the world. The project was fully described in the RAILWAY WORLD of April, 1913, when its construction was well under way, although far from completion. The investment amounts to fully $40,000,000 and provides in addition to a modern and beautiful passenger station for all roads entering the city, a belt line for all such roads, the separation of all grades, two new freight yards for the interchange of traffic, four local freight houses and one new team track yard. Work on the project which has consumed four years, is now all practically completed with the exception of a double track bridge across the Kaw River and an 8,000-foot double-track steel viaduct which, when completed will provide a direct entrance to the station for the four roads entering from Kansas City, Kansas.

The station building itself, which cost $6,000,000 and is constructed of steel, stone and concrete, is a remarkable example of architectural beauty combined with railway efficiency. As the accompanying floor plan indicates, it is built in the shape of a "T," the head house, which faces a plaza being 510 feet long by 143 feet wide and six stories high. The stem of the "T" is 410

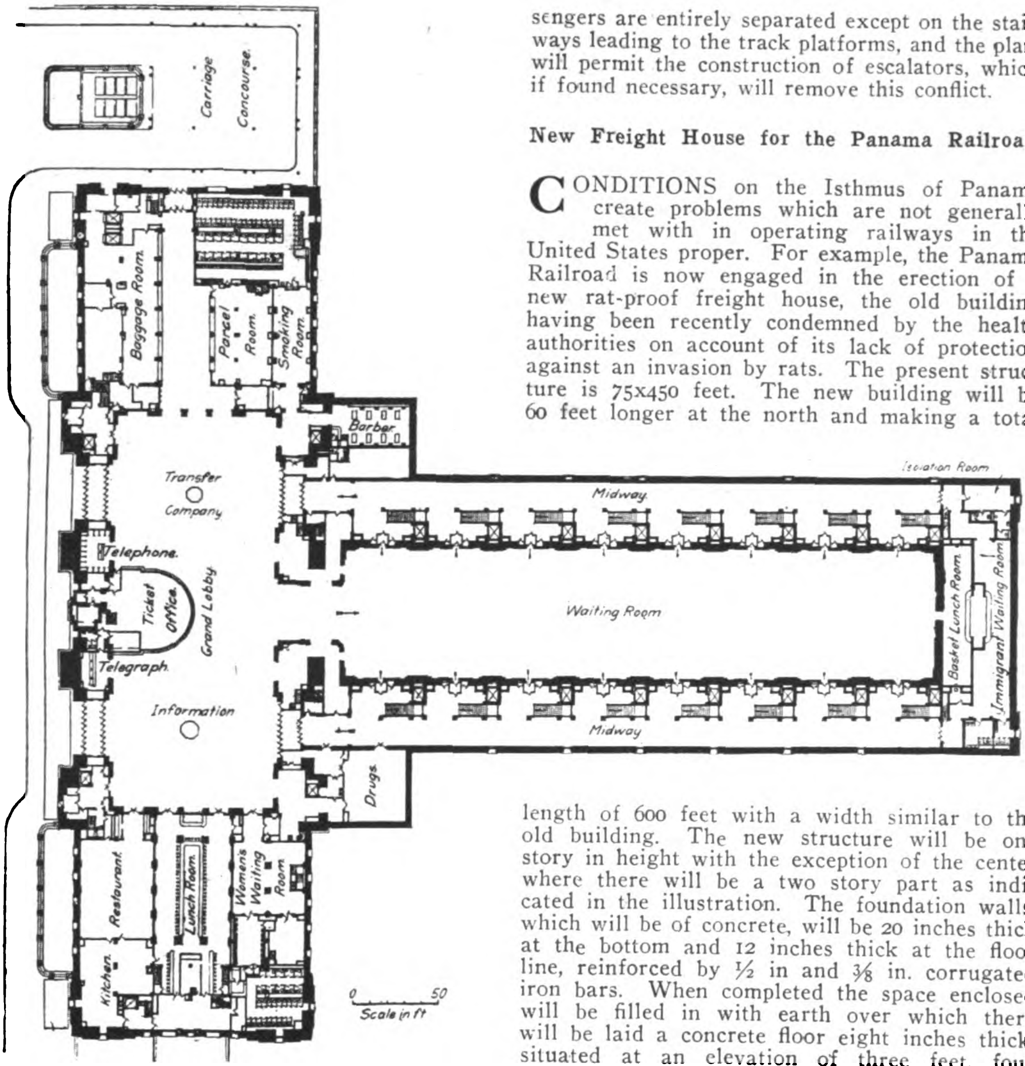


Two Views of the New Kansas City Union Passenger Station. The First Showing the Grand Lobby and the Second, the Rear of the Station with its Numerous Modern Train Sheds.

feet long by 165 feet wide and extends out over the tracks. The second stories of the wings of the building are devoted to offices for the terminal company and various roads. The grand lobby which has been kept entirely free from seats is 242 feet by 103 feet in area and 92 feet high. It is finished in Kasota and Sagiola marble and trimmed with Great Bend, Tenn., brown marble. Three great chandeliers together with eight groups of side wall lights are employed for illuminating purposes. On the south side of the lobby is a semi-circular ticket office with nineteen railroad and four Pullman ticket windows. Signs over the windows are illuminated automatically as the windows are opened. The ticket stock room is directly below the ticket office and connected with it by a spiral stairway, while the terminal ticket auditors are located on a mezzanine floor directly above the rear of the ticket office.

Immediately adjacent to the ticket office on the east is the telegraph office, while on the opposite side are placed the telephone booths. An octagonal information bureau is located in the center of the east end lobby, while a similar booth is provided for the transfer company in the west end. A bulletin of trains is installed in front of the station master's office on the mezzanine floor just to the left of the waiting room, on which the information is presented by means of small metallic letters placed in slots according to a system devised by the Commercial Sign Company, Ashtabula, Ohio. No train announcing system will be installed at present and all trains will be called by ushers.

Directly opposite the ticket office and opening from the grand lobby is the general waiting room, 352 feet long by 78 feet wide. This area is given up largely to seats, having 44 double mahogany seats with a capacity of 750 persons. This room is finished in terra cotta with a base of Great Bend marble and a paneled plaster ceiling. Na-



Floor Plan of the New Union Station at Kansas City.

tural illumination is provided by large triple windows over each train gate while large light clusters are placed along each side wall.

On each side of this room are eight train gates, directly back of which is an exterior concourse are stairways leading to the platforms below. Each gate is equipped with two National train indicators. In this way the passengers are enabled to remain seated in the waiting room until their trains are ready and by collecting in those seats adjacent to the train gates through which they must pass, they are advised at once when their trains are ready without the necessity of standing about the gate.

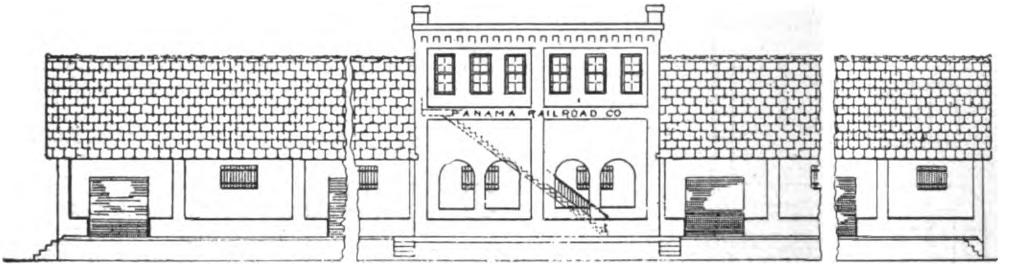
The concourse on each side of the train gate is also used as an exit from trains by incoming passengers, who, however, do not pass through the main waiting room, but directly into the grand lobby through doors opposite the main entrance. In this way incoming and outgoing passengers are entirely separated except on the stairways leading to the track platforms, and the plans will permit the construction of escalators, which, if found necessary, will remove this conflict.

New Freight House for the Panama Railroad.

CONDITIONS on the Isthmus of Panama create problems which are not generally met with in operating railways in the United States proper. For example, the Panama Railroad is now engaged in the erection of a new rat-proof freight house, the old building having been recently condemned by the health authorities on account of its lack of protection against an invasion by rats. The present structure is 75x450 feet. The new building will be 60 feet longer at the north and making a total length of 600 feet with a width similar to the old building. The new structure will be one story in height with the exception of the center where there will be a two story part as indicated in the illustration. The foundation walls, which will be of concrete, will be 20 inches thick at the bottom and 12 inches thick at the floor line, reinforced by ½ in and ⅜ in. corrugated iron bars. When completed the space enclosed will be filled in with earth over which there will be laid a concrete floor eight inches thick, situated at an elevation of three feet, four inches above the street level. The main outside walls will be 11 inches thick rising to a height of 16 feet from the floor.

The roof will be supported by iron trusses, spaced on 20-foot centres, with the top and bottom members of ⅜ by 3½ by 6-inch material, and the other truss members of ⅜ by 2 by 2½-inch material. There will be 28 roof trusses in the building. Where the walls separate the two-story part from the shed, purlins will extend from the trusses and be embedded in the wall concrete. The roof covering of the shed will consist of red colored tile from the Paraiso stock pile, the same as used on the Balboa shop buildings.

The floor plan of the shed provided for a depressed track extending practically its entire length. It will be 12 feet wide, with top of rail four feet below floor level, and will be located 42 feet from the street side and 21 feet from the rear. The shed space will be entirely devoted to freight storage, with the exception of two toilets, one for the gold and the other for silver employes. The front of the 2-story part on the lower floor will be partitioned off into two



FRONT ELEVATION OF PANAMA RAILROAD'S NEW FREIGHT HOUSE.

rooms, each 18½ by 23 feet in plan, one a specie room, and the other a storage room for small freight parcels. Back of these rooms will be a truckway, which will allow communication through the 2-story part from one section of the shed to the other. The side and end walls will be pierced at regular intervals by iron barred windows, while door openings, 10 by 10 feet in size, will be spaced at every 40 feet along the front or street side.

The 2-story part will have a battlemented front, and will be enclosed by fire walls fifteen inches thick, with a reinforced concrete floor and roof. The roof will be nearly flat and will be covered with tar and gravel in accordance with Barrett specifications. The second floor will be partitioned off with 7-foot frame partitions to meet the requirements of the freight agent and his office force. The front wall of the 2-story part will extend out over the 8-foot platform which will be built along the front of the shed. This wall will be pierced by four arched openings each five feet six inches wide by eight feet four inches high at the top of the arch, and at the top, will be surmounted by a 2-foot parapet with turreted corners. Access to the upper floor will be provided by two stairways, one on the outside platform, and the other on the inside of the building. The estimated cost of the freight house is $72,000.

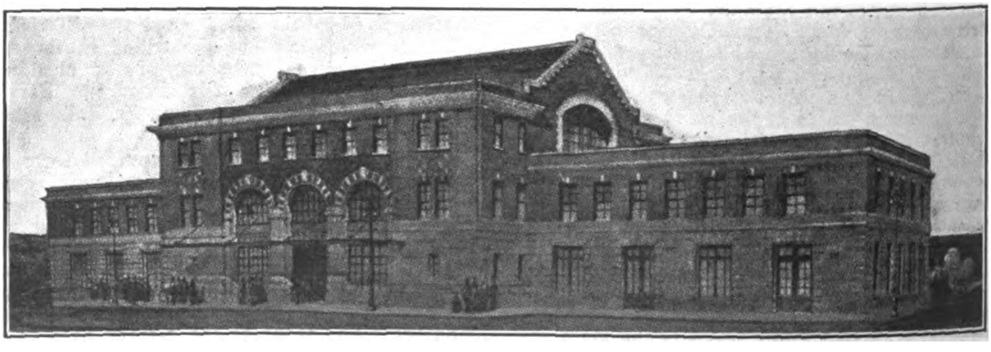
Oregon Short Line's New Passenger Station at Pocatello, Idaho.

THE Oregon Short Line is to construct a new passenger station at Pocatello, Idaho, the general appearance of which is indicated in the accompanying illustration. The main portion of the building will be three stories high and occupy an area 77x89 feet. The wings will each be 60x68 feet and the entire building will be fire-proof construction throughout, the roof being shingled in asbestos. Gray stone and dark red brick are the construction materials employed.

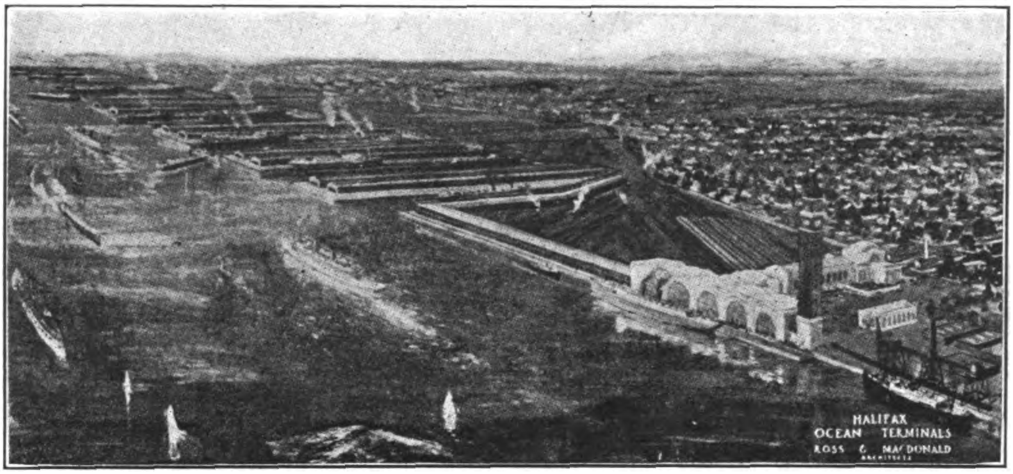
The first floor has been planned to contain the usual facilities for the accommodation of passengers and for the handling of baggage and express. The general waiting room will be 41x89 feet, with a balcony entirely around it on the second floor. The left wing of the first floor is to be employed for a lunch room on the track side and a dining room, pantry and kitchen on the street side. In the right wing will be located an immigrants' waiting room, the mail clerks' office and the baggage room, which will be 30 feet wide by 60 feet long. At the extreme end of the wing will also be found an express room and express office. The floors will be of tile in the main waiting rooms and dining room and all cement in other portions of the first floor. The second floor will be entirely devoted to the railroad company's offices.

Ocean Terminals at Halifax, N. S.

PRELIMINARY plans have been submitted to the Intercolonial Railway for new ocean terminals at Halifax, N. S., which indicate that when complete they will be among the finest and most comprehensive in the world. The accompanying photograph gives a general view of the proposed terminals which are to be equipped for the handling of both passengers and freight and the transference of passengers, baggage, mail and express to and from railway trains and steamships. Local Halifax city traffic is also to be accommodated. The general scheme, as outlined in a recent issue of the "Canadian Railway and Marine World" consists of a passenger station built in the shape of a large letter "T," not unlike the new Union Station at Kansas City



GENERAL APPEARANCE OF THE PROPOSED NEW STATION OF THE OREGON SHORT LINE AT POCATELLO, IDAHO.



ARCHITECT'S DRAWING OF THE PROPOSED NEW OCEAN TERMINALS AT HALIFAX.

referred to elsewhere, the foot of the "T" being at the shore end and the head of the "T" at the steamship landing stage. The shore end of the building will provide accommodations for the local Halifax traffic and will contain ticket offices, baggage and parcel checking rooms, restaurant, retiring rooms, etc. The upper floors of the building will be employed for the offices of the railway and steamship lines.

The general plan provides a landing stage approximately 2,000 feet long, which will be divided into two parts, the northerly third for the active handling of passengers, baggage, mail and express and the remainder for the handling of cargo. It is upon the northerly end of the landing stage that the top portion of the "T" shaped building is placed. Passengers disembarking from steamships will enter the building at the second story level.

New Engine Terminal Facilities for Southern Railway at East St. Louis.

NEW engine terminal facilities for Southern Railway at Denverside, near East St. Louis, Ill., will be provided at once at a cost of approximately $273,000. The new terminal will include an 18 stall round house, 90-foot turn table, modern coal and cinder handling plant, new machine shop and additional machinery, wash room, store room, oil house and office building. Complete arrangements will also be made for water supply, fire protection, drainage, and lighting. An important part of the work will be the construction of repair yard tracks and other track work.

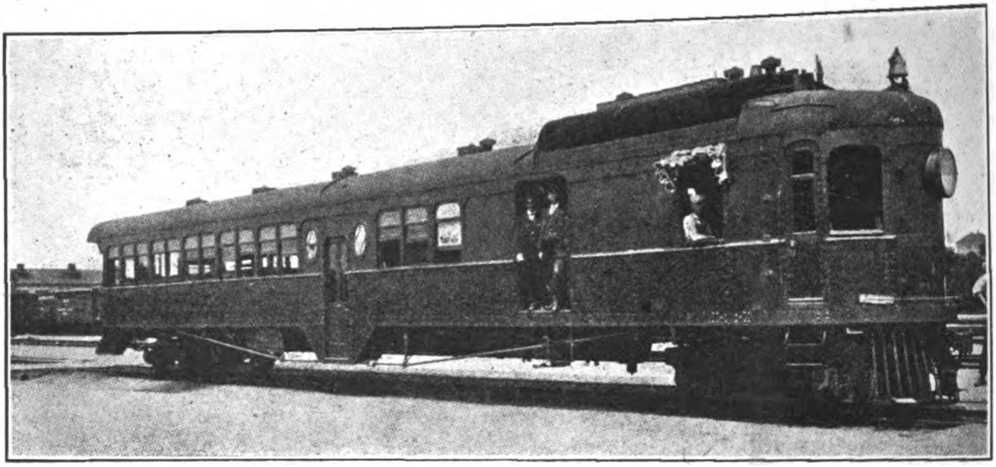
Grading necessary for the tracks is now under way and bids have been invited for the construction of the round house, shop and other buildings. It is intended to have the new facilities completed and the entire plant in use by the early part of the coming summer so as to be fully prepared for the succeeding fall business.

Construction of Terminal Facilities by Grand Trunk Pacific Railway.—The Grand Trunk Pacific Railway has let contracts to the value of $300,000 for terminals in British Columbia. This work comprises the erection of divisional point facilities at Endako, Smithers, Prince George and Pacific, and will include round houses, machine shops and other railway buildings. Preparations are also being made for oil storage buildings along the line, as it is understood that oil burning locomotives are to be used in the fast transcontinental services of the company.

Interstate Commerce Commission

Head-on Collision Between Gasoline Motor Car and Passenger Train.

THE Commission, through its division of safety, has issued a report on the head-on collision which occurred on the Kansas City Southern Railway near Tipton Ford, Mo., on August 5, 1914. This collision resulted in the death of thirty-eight passengers and five employes and the injury of thirty-four passengers and four employes. The motor car which was of light steel construction 70 feet long and weighed 74 tons, was totally destroyed. The passenger train, which consisted of four mail and express cars, one day coach, one chair car and one Pullman sleeping car, besides the locomotive, was running at the time of the collision, at about thirty-five miles per hour. The motor car was running at about the same speed. The accident, which occurred on a tangent 550 feet in length, was apparently the result of a confusion of train orders, the direct cause being the failure of the motor car to wait at Tipton Ford for train coming in opposite direction, as directed by order issued by operator on duty at Joplin to Conductor Nicholas, of the motor car. As the entire crew of the motor car, including Conductor Nicholas, were killed in the collision and their bodies cremated, no evidence was procurable as to the reason why the instruction contained in Order No. 84 was not obeyed by them. In commenting on the accident the Commission's report states:



VIEW OF MOTOR CAR TAKEN SOME TIME PRIOR TO ACCIDENT.

"This is the first accident investigated by the Commission wherein a gasoline motor car was involved. On account of the fire caused by ignition of this highly inflammable substance, the casualty list in this accident was much larger than it otherwise would have been. The rapidly increasing use of these motor cars, carrying large quantities of gasoline, introduces such an additional element of danger as to demand extraordinary precautions against the possibility of collisions wherever such cars are used.

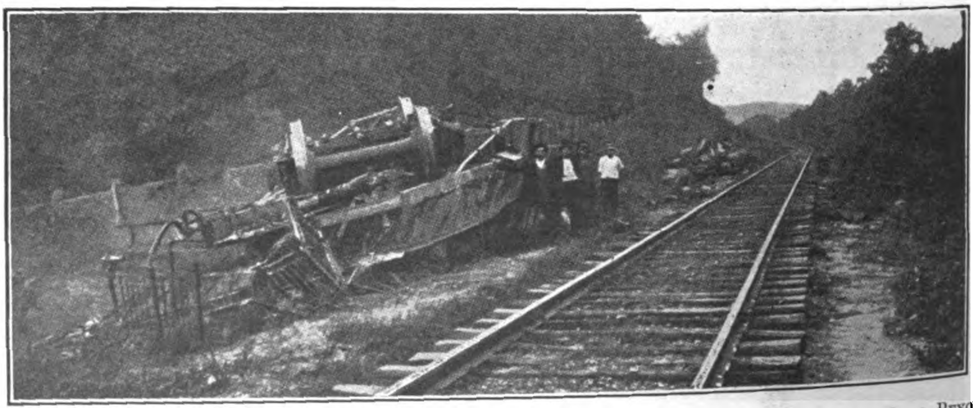
"As previously noted, no block signal system is in use on the Kansas City Southern Railway. It appears also from the facts developed in this investigation that even the inherently weak train-order system is not used at its highest degree of efficiency on this railroad. Rule No. 208 of the Kansas City Southern Railway book of rules provides for the placing of a meet order at the designated meeting point "when practicable." It was obviously not practicable to use the middle order in this case, for the reason that no operator was stationed at Tipton Ford.

"The 20 miles of track between Joplin and Neosho is used jointly by trains of the Kansas City Southern and Missouri and North Arkansas Railroads. Four first class and two third class trains of the latter road are scheduled to pass over this section of track daily, subject to the operating rules of the Kansas City Southern Railway. There are two passing tracks between Joplin and Neosho and it must frequently become necessary to require trains to meet at those points; yet no operator is employed at either place, and it is thus rendered impossible to use the middle order at meeting points on this section of track."

Reduction in Express Company Earnings.

THE Commission has issued a report which shows a great reduction in the annual income of express companies for the year ending June 30, 1914. The operating loss of the Adams was reported to be $259,284 for the month of June and $965,385 for the year. The operating loss of the American was $50,659 for the month and $644,769 for the year. The operating income of the Globe was $2,182 for the month, whereas it reported an operating loss of $27,242 for the year. The United States reported an operating loss of $214,340 for the month and an operating loss of $572,906 for the year. The Western Express reported an operating income of $1,134 for the month and an operating loss of $38,904 for the year.

The Great Northern reported an operating income of $193,182 for the year, a decrease of over $64.000 in comparison with last year. The



APPEARANCE OF CAR AFTER HEAD-ON COLLISION. THE CURVE IN THE BACK-GROUND IS JUST BEYOND THE POINT OF ACCIDENT.

Northern Express reported an operating income of $263,615, a decrease of nearly $40,000. The Southern reported an operating income of $890,773 for the year, a decrease of over $280,000. The Wells Fargo reported an operating income of $104,256 for the year, a decrease of over $614,000.

Combining the reports of all the express companies, it was shown that they suffered an operating loss of $287,685 for the month of June, and enjoyed an operating income of but $404,529 for the year, a decrease for the year of over $4,000,000.

Ruling on Passenger Fare Refund.

IN a recent decision, the Commission has ruled that a passenger may not leave a train at any point he chooses and then recover from the railroad on the whole of the unused portion of a through ticket he purchased. T. C. Kennedy, of Chicago, bought a ticket from New York to Chicago on the New York Central. He left the train at Syracuse and tried to collect the fare from Syracuse to Chicago. The Commission decided a refund should be made from Elkhart, Ind., the first stop for which a ticket can be purchased, and reparation from Elkhart to Chicago was awarded.

Commission Petitioned for Relief Under the Panama Canal Act.

THE Commission has announced further hearings upon the applications of railroads under the Panama Canal Act for permission to continue their ownership and operation of certain water lines.

The individual petitions to be heard will include the ownership and operation of the Chesapeake Bay lines by the Pennsylvania, Baltimore, Chesapeake & Atlantic and the Maryland, Delaware and Virginia railroads; the ownership and operation of the Chesapeake Steamship Company by the Southern and the Atlantic Coast Line; the ownership and operation of the Baltimore Steam Packet Company by the Seaboard Air Line Railroad and the ownership and operation of the Old Dominion Steamship Company and the Virginia Navigation Company by the Norfolk & Western, Chesapeake & Ohio, Atlantic Coast Line, the Seaboard Air Line and the Southern railroads.

The hearing on the petitions of other railroads which own and operate water lines on the Great Lakes have been concluded. It is understood that the Commission is now drafting some opinions setting forth whether the rail lines shall or shall not be permitted to operate Lake lines.

Passenger Fare Increase on Baltimore and Ohio.

THE Commission has granted authority to the Baltimore and Ohio Railroad and the Central Railroad of New Jersey to charge a higher rate for through passenger tickets from New York City to the West that the aggregate of the intermediate fares to certain designated points. The through fares, in any event, are not to exceed those established by the Pennsylvania Railroad to and from the same points. The fares, thus adjusted, will be on a basis of 2½ cents a mile. The through rate from New York to Chicago was recently increased; the new rates authorized are to make intermediate fares conform to that basis.

Ruling on Salmon Rates from Pacific Coast.

PERMISSION has been granted to transcontinental railroads by the Commission to charge rates on canned salmon from Pacific Coast shipping points to Eastern destinations without regard to the limitations placed on these rates by the long-and-short haul section of the Interstate Commerce Act.

This permission applies to shipments from the Western points of origin on canned salmon and canned shad in carloads, minimum weight 70,000 pounds, to destinations in territories designated as Groups B, C, D and E.

Pennsylvania Railroad Increases Passenger Rates.

A GENERAL increase in long distance and suburban passenger rates has been announced by the Pennsylvania Railroad to become effective December 15th. The Philadelphia and Reading has also announced that it would make increases similar to those of the Pennsylvania. In making the announcement, the Pennsylvania Railroad made public the following statement:

"As the Commerce Commission has declared it to be a matter of public policy that each branch of the railroad service should contribute its proper share to the cost of operation and of return upon the property devoted to the use of the public, the road has resolved upon readjustments in passenger rates."

"The policy of the company," the statement adds, "is to embody the policy established by the Commission and so spread the changes in fares that the burden will fall but lightly on any single traveler."

Rate Readjustments from St. Louis and Ohio River Crossings.

FREIGHT rates throughout what is known as "southeastern territory"—east of the Mississippi and south of the Potomac and Ohio Rivers—have been generally readjusted by a decision of the Commission. The decision, supplemental to one announced several months ago concerning operation of the long and short haul law, with respect to class and commodity rates from all sections of the country to destinations in the south Atlantic and Gulf States, authorized the carriers in most instances, under specified restrictions, to continue existing class and commodity rates which, in most instances, are higher to intermediate points than to the more distant points.

Rates, on both class and commodity freight, from New York and the East generally, from St. Louis and Chicago and from all Ohio River crossings, including Louisville and Cincinnati, to and from points in the South Atlantic and Gulf States, are affected. In most instances existing rates are authorized, in which there are technical violations of the long and short haul provisions, but in five specific instances the Commission declined to grant higher rates from the Northern and Eastern points to intermediate destinations than to the more distant points. The decision is effective April 1, 1915.

Higher Passenger Rates Filed.

ACTING on the suggestion of the Commission in the recent five per cent rate increase hearing, the railroads operating east of the Mississippi and west of Pittsburgh and Buffalo, have filed schedules, raising interstate passenger rates almost uniformly at a 2½-cent level, effective December 1st.

It is estimated that if the new schedules are approved the railroads immediately involved will be able to add $1,000,000 to their yearly income.

The new rate between Chicago and Cincinnati will be $7 as compared with $6, the standard rate between Chicago and Cleveland $8.55 instead of $7.75, between Chicago and St. Louis $7.50 instead of $5.80, standard rate between Chicago and Buffalo $13.10 instead of $12. Higher fares between points in trunk line and central passenger territories will be filed in the near future, the rate between New York and Chicago to be probably $21.10 instead of $20.

Trunk Line Switching Allowance at St. Louis Reduced.

THE Commission has issued a supplemental decision in the case of the Manufacturers' Railway of St. Louis, directing the trunk lines to cancel out their allowances of $4.50 per car to the Manufacturers' Railway and to fix an allowance for the future not to exceed $2.50 per car. The Commission, however, refused to sanction, by affirmation or otherwise the establishment of through rates between the trunk lines and the St. Louis Switching Railway.

It was noted in the decision of the Commission:

"If the trunk lines elect voluntarily to participate in the establishment and maintenance of through rates, the division thereof which they may lawfully pay to the Manufacturers' Railway may not, in view of the common ownership of a majority of the stock of that carrier and of the Anhouser-Busch Brewing Association, its largest shipper, be more than is just and reasonable for its service.

"There must in any view taken of this case be some point of which the fact of this common ownership of stock becomes importantly significant, and immediately beyond the limit of reasonableness allowances, divisions or concessions of any kind whatsoever granted by the trunk lines to the Manufacturers' Railway comes, in the Commission's view, that point. In all other respects this carrier is in this case treated by the Commission just as any other terminal common carrier that does not serve a mutually owned industry shipper would be."

Industrial Railway Decision Reversed.

IN a supplemental decision in the industrial railway case issued on November 6th, the Commission directs trunk line railroads to re-establish allowances or divisions with United States Steel Corporation railways which are concededly common carriers. Tens of thousands of dollars annually will accrue to the industrial lines through the decision.

In its conclusions the Commission said:

"We shall expect the trunk line roads, under the modification here made of our original findings, to re-establish allowances, divisions or demurrage or per diem arrangements with the industrial roads only in instances in which the transaction is bona fide and in which it is clearly lawful and proper. Each case must be judged by its own facts and merits."

The Commission modified its original findings on account of the decision of the Supreme Court in the tap line cases.

"We have concluded," the Commission says, "that it is our duty to refrain from issuing an order and to avoid the delay which would be attendant upon litigation.

"What we have said relative to establishment of allowances or divisions with the industrial roads referred to is not to be understood as a finding by us that those industrial roads can resume these relations with the trunk line carriers without transgressing the provisions of the commodities clause. If infractions of that law come to our notice, we shall in the proper way bring them to the attention of the Department of Justice."

Chairman Harlan, who prepared the original decision in the industrial railways case, dissented from the findings of Commissioner Clark and the majority in to-day's decision. He holds, in effect, that the iron and steel railways are purely plant facilities and that any allowances or divisions of rates granted to them by the trunk lines are in the nature of rebates from the regular rates. He maintains that the privileges and advantages of allowances or divisions were being enjoyed by a relatively small number of extensive industrial establishments and that they ought "either to be held to be an unlawful concession by the carriers to such shippers, or, if found to be lawful, the principles upon which they might be justified ought to be clearly defined by the Commission so that like privileges and advantages might be claimed, as of right, by all industrial establishments served by the land carriers in question, whether they be large or small."

Chairman Harlan holds that an order should be entered on the basis of the original report, so that the whole matter might be judicially reviewed and some definite principle established by which all similar cases could be disposed of.

LEGISLATION

The Passage of the Clayton Bill.—The Clayton bill, to supplement the anti-trust laws, which has been under discussion in Congress for many months, became a law October 15. As adopted it consists of 26 sections; and it deals chiefly with "commerce" which word, in the Act, is used to mean interstate and foreign commerce, substantially as defined in the interstate commerce law. This law deals with carriers specifically only in sections 7, 9 and 10.

Section 7 forbids one corporation to acquire stock of another, if such acquisition will restrain commerce or lessen competition; but with certain provisos; and one of these provisos is that Section 7 shall not prohibit common carriers from aiding or buying branch lines or beeders where competition is not lessened by such action.

Section 9 makes it a felony for an officer of a common carrier to wilfully misapply funds; maximum penalty, ten years' imprisonment and a fine limited only by the discretion of the court.

Section 10 is designed to forbid collusive contracts for supplies. This section goes into effect October 16, 1916, and reads as follows:

Section 10. That after two years from the approval of this Act no common carrier engaged in commerce shall have any dealings in securities, supplies or other articles of commerce, or shall make or have any contracts for construction or maintenance of any kind, to the amount of more than $50,000, in the aggregate, in any one year, with another corporation, firm, partnership or association when the said common carrier shall have upon its board of directors or as its president, manager or as its purchasing or selling officer, or agent in the particular transaction, any person who is at the same time a director, manager, or purchasing or selling officer of, or who has any substantial interest in, such other corporation, firm, partnership or association, unless and except such purchases shall be made from, or such dealings shall be with, the bidder whose bid is the most favorable to such common carrier, to be ascertained by competitive bidding under regulations to be prescribed by rule or otherwise by the Interstate Commerce Commission. No bid shall be received unless the name and address of the bidder or the names and addresses of the officers, directors and general managers thereof, if the bidder be a corporation, or of the members, if it be a partnership or firm, be given with the bid.

Any person who shall, directly or indirectly, do or attempt to do anything to prevent anyone from bidding or shall do any act to prevent free and fair competition among the bidders or those desiring to bid shall be punished as prescribed in this section in the case of an officer or director.

Every such common carrier having any such transactions or making any such purchases shall within thirty days after making the same file with the Interstate Commerce Commission a full and detailed statement of the transaction showing the manner of the competitive bidding, who were the bidders, and the names and addresses of the directors and officers of the corporations and the members of the firm or partnership bidding; and whenever the said Commission shall, after investigation or hearing, have reason to believe that the law has been violated in and about the said purchases or transactions it shall transmit all papers and documents and its own views or findings regarding the transaction to the attorney general.

If any common carrier shall violate this section it shall be fined not exceeding $25,000; and every such director, agent, manager or officer thereof who shall have knowingly voted for or directed the act constituting such violation or who shall have aided or abetted in such violation shall be deemed guilty of a misdemeanor and shall be fined not exceeding $5,000, or confined in jail not exceeding one year, or both, in the discretion of the court.

Missouri Full Crew Law Defeated.—As briefly referred to editorially, the people of Missouri have repudiated the State Full Crew Law. Complete official figures show the majority given against the bill to be three times as great as the estimate based on early returns. There were 324,085 votes against and 159,593 in favor, a majority of 164,492 in opposition to the bill, making the vote more than two to one against it. Outside of the three principal cities, St. Louis, Kansas City and St. Joseph, the measure received only 86,660 votes in the State and was beaten by a ratio of about three to one. The farmers in every section voted almost solidly against it.

The city of St. Louis, in which the Brotherhood of Trainmen looked for a big majority for their bill, went against it by 18,417 votes. In Kansas City, where it was aided by a local political fight and in St. Joseph, where its friends made an especially vigorous campaign, it carried.

Especial interest was attached to the election all over the United States, as it was the first time any regulation affecting railroads was submitted to a vote of the people. W. G. Lee, of Cleveland, Ohio, national head of the Brotherhood of Trainmen, came to Missouri and personally conducted the campaign for his organization. The Missouri statutes prevented the roads making an active campaign, whereas the members of the Trainmen's Union were free to work as they saw fit in behalf of the measure and spent vast sums of money. The majority cast against the bill is one of the greatest in the history of Missouri, and is far bigger than the State has ever given any candidate for office.

After the Legislature passed the measure, the railroads, under the referendum, brought it before the people for a vote. Railroad officials are jubilant over the result and declare it a striking and uncontrovertible evidence that the farmers and people of the State generally are now in sympathy with the transportation companies and in favor of giving them fair play, and that railroad baiting has ceased to be popular.

Report of Special Committee on Relations of Railway Operation to Legislation.—On November 3rd, the Special Committee on Relations of Railway Operation to Legislation, issued a report outlining the general work of this Committee since the last general report of May 4, 1914. Railroads representing 227,141 miles of lines are now supporting the work of this Committee which includes the following sub-committees: Officers of the Mechanical Departments; Engineering Officers and Signal Officers. The following is a resume of the report:

In report No. 12, allusion was made to the proposition to increase largely the discretionary power of the Interstate Commerce Commission. As a result of hearings on individual bills relating to various specific items of railway operation, practically all the subjects pending before the House Committee on Interstate and Foreign Commerce have been combined in a single bill giving the Interstate Commerce Commission authority to require the installation, under certain conditions, of block signal systems, automatic train stops, and steel passenger equipment, and authorizing the Commission to designate the type of headlights to be used, and to investigate the roadbed, track, equipment and facilities used by common carriers, and to direct changes, improvements and repairs to be made in them. This bill has not yet been reported out of committee, but it is probable that this is the form which any legislation on this subject will take. Your Committee has obtained the views of a very large number of operating officers on this bill, and is prepared to present the conclusions of the railways on the subject when opportunity offers.

With a view to ascertaining the extent of the financial burden placed upon the railways by legislation affecting railway operation, your Committee issued Circular No. 64, asking for such figures as could be furnished.

A number of roads have been unable to furnish them, and your Committee recommends that, hereafter at least, such separation of accounts be made as to enable each road to know definitely the precise amount which it is obliged to pay out by reason of legislation such as that above referred to.

Since the last report no bill has passed both houses of Congress.

A bill changing the penalty clause in the Hours of Service Act has passed the House of Representatives, and is pending in the Senate. If this becomes law, the penalty for violation of that act will not be less than $100 nor more than $500, instead of not more than $500, as at present.

In Report No. 12, you were notified that the Chief Inspector of Locomotive Boilers had asked for a conference preliminary to setting a factor of safety for locomotive boilers in service or under construction prior to January 1, 1912, and that the railways were represented at this conference on April 28, 1914, by the Sub-Committee of Mechanical Officers. An agreement was reached between the Sub-Committee, the Government officials, and the employes, on this subject. This agreement was approved by the Interstate Commerce Commission after hearing, and the necessary changes in the rules were promulgated by the Commission on June 9, 1914.

A bill is pending in Congress and has been reported to the House of Representatives, extending the jurisdiction of the Bureau of Locomotive Boiler Inspection over all parts of the locomotive. Witnesses for the railways appeared before the House Committee on Interstate and Foreign Commerce in opposition to this bill, and in case an opportunity is offered similar action will be taken before the Senate committee having it in charge.

In April, 1914, a tentative preliminary report of a committee of the American Society of Mechanical Engineers, was given wide circulation containing a proposed code for the construction, maintenance and inspection of stationary boilers, and a proposed typical act enforcing such code to be recommended for passage by the various state legislatures.

In view of the inclusion in that report of a number of requirements which were not in harmony with the experience of mechanical officers of the railways, an opportunity was sought and obtained to discuss the matter with the responsible officers of the American Society of Mechanical Engineers.

In consequence of these representations it is thought that the code in question will be materially modified in the final report which will probably be made to that Society in December, next.

Your Committee, however, has not felt that it should give even tentative approval to any proposed legislation on this subject, inasmuch as the railways ought to have the largest liberty of action in dealing with this question, in view of the great disparity in local conditions; nor does it feel that in dealing with the proposed code of rules it should do more than call the attention of the American Society of Mechanical Engineers to such points as in its judgment are objectionable.

On June 1, 1914, Bulletin No. 60 was issued, bringing the information as to the progress of construction of steel and steel underframe passenger equipment up to January 1, 1914.

The number of steel and steel underframe passenger equipment cars constructed in the United States in the calendar year 1914, was 3,129, bringing the total number of these cars in existence to approximately 14,000. This latter figure compares with 1,302 such cars in service January 1, 1909.

In view of the apparent demand, your Committee issued on July 11, 1914, Bulletin No. 63, revising and superseding Bulletins Nos. 22 and 32. This bulletin contains a suggested arrangement for the telegraphic notification of accidents to the Safety Division of the Interstate Commerce Commission and the Bureau of Locomotive Boiler Inspection, together with a cipher code adapted for this purpose.

There has been an extremely heavy demand for this bulletin, which was issued with the consent or approval of the heads of both of the departments named above.

Presentation of the railways' case before the Interstate Commerce Commission in the private car investigation, was concluded in June, 1914. The total expense of the proceedings was $6,129.01, which was paid by your Committee and the specific railways which had authorized their representation were billed for their proportion thereof. Your Committee has been reimbursed for all of this expense except $63.24. The opinion of the Interstate Commerce Commission has not yet been made public.

During 1915, the legislatures of forty-three states will be in session.

After considering the matter with some care, your Committee has decided to maintain the arrangement of keeping itself informed of all bills affecting railway operation introduced and passed in all states, and will arrange to notify its supporters of them. During the past four years, 2,443 bills affecting railway operation were introduced in 112 sessions of the various legislatures, of which 360 became law.

On September 5, 1914, Bulletin No. 64 was issued, giving a classification of bills introduced and laws passed in the legislatures in session during 1914.

Your Committee feels that in the states where state committees have been organized, the work done by such committees has been extremely beneficial to the general movement. Their continuance during the session of the legislatures which meet next year is strongly recommended.

LEGAL.

Important Recent Federal and State Legal Decisions Affecting the Carriers.

THE following analysis of the more important Federal and State Court decisions rendered during October and which relate to the operation, management and regulation of the railroads of the United States, constitutes a continuation of the record began in the July issue of the "Railway World." As is apparent, the necessary reference to Court records and authorities is given in each case. Suggestions regarding these records will be thankfully received as an effort is being made to make them of practical value to the legal departments of the various railways.

Counsel Fees in Foreclosure Suit.—(Federal, New York.) Where the property of a railroad company sold on foreclosure realized a surplus above the mortgage debt, the court properly refused to award counsel for a holder of the bonds which, as trustee, held a subordinate lien thereon and was interested with complainant, a fee out of the fund generally which would require the company to pay it, but left him to his statutory lien on that portion of the fund belonging to his clients.—(Farmers' Loan & Trust Co. v. New York Ry. Co., 215 Fed. 712.)

Congress May Charter Railroad Company.—(Federal, New York.) Under its power to regulate commerce, establish post roads, and provide such facilities as it may deem proper, and as military exigencies, when they arise, may require for the transportation of troops and munitions of war, Congress has power to charter a corporation to build and operate a railroad whereon interstate commerce may be conducted, and the mail, troops, and munitions of war may be transported, and for this purpose it is proper that such corporations be authorized to conduct the general business of a common carrier for its own purposes, in addition to serving the government.

Congress having incorporated an interstate railroad company to engage as a common carrier in interstate commerce, and also to serve the government by the transportation of mails, troops and munitions of war, the states through which the railroad was located had no power to announce conditions for the non-compliance with which the corporation would be excluded from doing business in the state, and hence Const. La., as amended (see Act No. 10 of Ex. Sess. 1907), providing that any federal, foreign or non-resident corporation which should institute any suit, or action in, or remove the same to any federal court within the state should be prohibited and denied the right to operate, conduct, or do any business within the state, and that thereafter any contract, agreement, engagement, or undertaking with or by such corporations should be null and void, was invalid as to such railroad company.—(Mercantile Trust Co. v. Texas & P. Ry. Co., 216 Fed. 225.)

Dynamite Must Be Accepted for Transportation.—(Federal, New York.) Dynamite has become a necessity in the industries, and the construction of works of public improvement, and is a legitimate subject of commerce which a common carrier is bound to accept and transport, and, so far as the carrier is concerned, such injury as necessarily results to others from the performance of its duty, without negligence, must be borne by them as an unavoidable incident of the lawful conduct of legitimate business.

A shipment of explosives in interstate or foreign commerce while in course of transportation is subject exclusively to the regulations prescribed by the Interstate Commerce Commission, and state or local laws have no application to it.

A railroad company, which directed a connecting vessel to discharge at one of its piers, where she was destroyed by an explosion of dynamite being unloaded from a car on such pier, held not liable because of its failure to notify the master of the presence of the dynamite, which was a commodity commonly handled at such places and usually with safety, and where also the cars were marked with the regular danger placards.—(Ingred v. Central R. Co., 216 Fed. 72.)

Turntables.— (Federal, Eastern Kentucky.) The turntable doctrine imposes a liability on a property owner for injuries to a child of tender years, resulting from something on his premises that can be operated by such a child and made dangerous by him, and which is attractive to him, where he fails to protect the thing so that such a child cannot be hurt by it.—(Barnhill's Adm'r. v. Mt. Morgan Coal Co., 215 F. 608.)

Question of Safety Must Be Considered by Jury.—(Federal, Western Virginia.) In an action for death of a railroad employe under Federal Employers' Liability Act (35 Stat. 65), by being struck by a train while decedent was working on a bridge evidence held to require submission to the jury of the railroad company's negligence in failing to keep a proper lookout and to warn decedent of the danger.—(Norfolk & W. Ry. Co. v. Holbrook, 215 Fed. 689.)

Need Not Run Trains at Loss.—(Federal, New York.) Where a railroad operated a line between two cities, and sufficient steam trains were run to accommodate the necessities of the people of those cities and an intervening city, and two steam trains a day each way were run which reasonably served the convenience and supplied the reasonable necessities of four small intervening points, the residents of which also had the convenience of a through interurban trolley line, complainant would be considered as having performed its whole duty to the public, and could not be compelled by the public service commission to operate two additional trains over the road each way per day at a net loss of over $3,000 per annum.—(Delaware, L. S. W. R. Co. v. Van Santwood, 216 Fed. 252.)

Recovery for Damages.—(Pennsylvania.) An adjoining land-owner could not recover for damage from smoke, soot, noise, or vibrations resulting from the operation of a railroad, where it was conceded that the engines were equipped with all known appliance to reduce the amount of smoke and soot, and there was no evidence of negligent or unskillful operation.—(Meyers v. Penn. Co., 91 A. 919.)

Conditions May be Imposed on Railway Company.—(Pennsylvania.) Pennsylvania Const. art. 17, sec. 9, providing that no street railway shall be constructed in a municipality without the consent of the local authorities, authorizes a borough to impose conditions on a street railway company as a consideration for the consent given. —(Carlisle v. M. M. S. Ry. Co., 91 A. 959.)

Negligence on Part of Employe.—(Pennsylvania.) Where a railroad yard employe, while on an errand for his foreman and before entering a building, noticed an engine standing on the track, and, though on leaving the building his view of the engine was obscured by an open door, neglected to push the door back to see that the track was clear, and was caught between the side of the building and the engine, he was guilty of contributory negligence barring recovery for his injuries.—(McCabe v. Bessemer Ry. Co., 91 A. 957.)

A Matter of Damages.—(Pennsylvania.) A plaintiff, dissatisfied with the amount of a verdict in his favor could not complain on appeal that the instructions directed the jury that plaintiff could not recover more than the amount of damages claimed in the trial.—(Young v. Penn. R. Co., 91 A. 919.)

Argument of Counsel Cause of Error.—(N. H.) In a damage suit against a railroad company argument of plaintiff's counsel that the verdict was not a very serious matter to the railroad, "taking from them a few coppers, but it means a good deal to" plaintiff, constituted prejudicial error, and entitles the railroad company to a new trial.—(Caverhill v. Boston & M. R. R.)

Actions for Personal Injuries.— (Maine.) Where plaintiff recovered a verdict on testimony that, as a result of his injuries, he was suffering from an incurable disease, was physically wrecked, and was able to do but little, if any, manual labor, newly discovered evidence that soon after the trial he went on a hunting trip, and later engaged in heavy work, and in dancing, being sufficient to render it probable that the verdict would be different on another trial, required the granting of a new trial.—(Southand v. Bangor & A. R. Co., 91 A. 948.)

Injuries to Passenger in Alighting.— (Virginia.) The complaint of a passenger for injuries in alighting, her coach being stopped beyond the station platform, and she being required to alight, where the ground was rough and thirty inches below the lowest step of the coach, no steps or aid by the conductor being furnished, held to state a good cause of action.—(Honaker v. New River H. & W. R. Co., 82 S. E. 727.)

No Authority to Condemn Land.—(Virginia.) Where, in proceedings by a railroad company to condemn land for an extension, the railroad's right to condemn the land was put in issue, and there was no proof that the railroad's directors as a board had ever authorized the extension of the line or had ratified the act of its general manager in attempting to procure land for such extension, the proceeding was unsustainable.—(Honoker v. New River H. W. R. Co., 82 S. E. 727.)

Negligence of Parent.—(New York.) Where a three year old child, who was permitted by his mother to go unattended, except by a four year old companion, and to play in the neighborhood of a railroad crossing at which there had never been a watchman and near which the parents had lived for several years, was struck by a train while crossing the track, the mother's negligence precluded recovery against the railroad company.—(Kieley v. New York Cent. R. Co., 149 N. Y. S. 299.)

Interpretation of Franchise.— (New York.) Where the language of a franchise is ambiguous, it will be construed against the grantee and in favor of the public, but, where free from ambiguity, the court will give force to its provisions, giving the language used its ordinary and accepted meaning.—(Raynor v. N. Y. S. L. I. Traction Co., 149 N. Y. S. 151.)

Railroad Land Subject to Right of Way.—(New York.) A lot condemned by a railroad company for railroad purposes, but not otherwise dedicated to or used by the public, may be subject to a private right of way easement acquired by prescription.—(Hood v. New York Central R. Co., 149 N. Y. S. 262.)

Bridges Property of City.—(New York.) The fact that a railroad company had been obliged to meet the larger portion of the expense of constructing bridges to carry streets over its tracks does not give it title to the bridges, which, being erected in the streets, are the property of the city.

The state may compel a railroad company, at its own expense, to eliminate crossings at grade by a depression of its tracks and the erection of bridges to carry streets over its right of way.

Where relator, under different agreements, constructed 58 bridges, carrying as many streets, in the borough of the Bronx over its right of way and tracks, which bridges were located entirely in the street and used by the railroad company only in some cases to support signal apparatus, such bridges belonged to the city and were not taxable to the railroad company as its property, but not so as to a tunnel constructed by the railroad for its exclusive use under a street.—(People ex rel New York Cent. R. Co. v. Purdy, 149 N. Y. S. 317.)

Backing Cars onto Street Crossing.—(Illinois.) A railroad company was negligent in backing cars onto a street crossing on a foggy night without any light or brakeman on the rear car.—(Coulter v. Illinois Central R. 106 N. E. 258.)

ORGANIZATION NOTES.

November Meeting of Canadian Railway Club.—The Canadian Railway Club which held its November meeting on the 10th of the month, was addressed by Mr. E. B. Tilt, engineer of tests, Canadian Pacific Railway, on: "Characteristics of Materials." Mr. Tilt dealt with his subject under the following heads:

Iron and Steel Products; Lumber; Brasses and Bronzes and other Alloys; Paints and Rubber Products. In discussing the iron and steel products, he dealt largely with their carbon content as being a very important factor in their proper production. He asserted that cast iron is still used for many purposes and that the largest castings are locomotive cylinders and car wheels. Very few driving wheel centers, however, are now made of cast iron and this material should not be used where it will be in tension unless these stresses are very low. Mr. Tilt also pointed out that, in addition to the steels, a number of alloy steels are now employed, the best known of which was vanadium.

Gathering of Traveling Passenger Agents at San Francisco.—The annual convention of the American Association of Traveling Passenger

T.P.A.
PASSENGER STATION
CHICAGO & NORTH WESTERN RAILWAY

SPECIAL TRAIN OF THE AMERICAN ASSOCIATION OF TRAVELING PASSENGER AGENTS AT COUNCIL BLUFFS, IOWA.

Agents was held October 12th and 13th, at San Francisco. The slogan of the convention was California, 1915, and the annual meeting was held in San Francisco in order to intelligently develop plans for a nation-wide campaign to bring the public to the Panama-Pacific International Exposition. The passenger men were entertained by the officials of the Exposition and were afforded an opportunity to inspect and study the grounds and buildings, the latter being for the purpose of bringing from first-hand observation, this important occasion prominently before the people in their respective territories. The members also proceeded on a tour through California visiting the grounds and buildings of the Panama-California Exposition at San Diego, Cal.

The accompanying illustration shows the special train of the passenger men at Council Bluffs, Iowa. Two hundred members and their families were temporarily domiciled in this train which was equipped with every feature of comfort and convenience for the party.

No Postponement of the International Engineering Congress at the Panama-Pacific International Exposition in 1915.—A report having recently been circulated to the effect that the International Engineering Congress was to be abandoned, we desire to state that this is not correct, but that the Congress will be held in San Francisco as scheduled, from September 20th to 25th, 1915.

In view of the conditions now prevailing in Europe, the governing bodies of the five National Societies under whose auspices the Congress is to be held, have recently given careful consideration to the feasibility of holding the Congress and to the probability of its success, with the result that each body has unanimously confirmed its original pledge to support the Congress. The Committee of Management is actively proceeding with arrangements, which are now well advanced, for meetings on the scheduled dates and for the publication of the transactions.

The Committee of Management is in receipt of a sufficient number of communications from various foreign countries throughout the world, including those located within the war zone, to indicate that a large majority of the papers originally requested for presentation at the sessions of the Congress and publication in its transactions will be handed in on time, and that the Congress will be truly international in character.

This great organization is being developed under the direction of the American Society of Civil Engineers; American Institute of Mining Engineers; American Society of Mechanical Engineers; American Institute of Electrical Engineers and the Society of Naval Architects and Marine Engineers. Colonel G. W. Goethals has consented to act as honorary president of the Congress and is expected to preside in person over its general sessions. Honorary vice-presidents include eminent engineers from all sections of the world and papers will be presented before the Congress from the following countries: Argentine Republic, Australia, Belgium, Brazil, Canada, China, Egypt, France, Germany, Great Britain, Holland, Hungary, Italy, India, Japan New Zealand, Russia, South Africa, Spain Sweden, Switzerland, United States.

How little effect the war will have upon the presentation of these papers is indicated by the fact that out of a total of 290 originally contemplated, about 220 are either definitely promised or well assured and of the remainder, are included contributions from nations in the present European war zone and it must be expected that some portion of them will not be secured. It is believed, however, that by substituting for these papers certain others which have been offered, and by taking advantage of other conditions which may yet arise, the general plans for the Congress may be carried with a minimum of change. The general questions to be discussed have been arranged for under the following heads:

The Panama Canal (24 topics); Waterways (6 topics); Irrigation (11 topics); Railways (7 topics); Municipal Engineering (8 topics); Materials of Engineering Construction (20 topics); Mechanical Engineering (28 topics); Electrical Engineering (8 topics); Mining Engineering (10 topics); Metallurgy (10 topics); Naval Architecture and Marine Engineering (19 topics) and miscellaneous.

Fifteenth Annual Meeting of Civic Federation.—The national problems arising out of the war will be considered at the fifteenth annual meeting of the National Civic Federation to be held in New York City on December third, fourth and fifth.

Ralph M. Easley, chairman of the executive council has issued a statement describing the scope of the program. Mr. Easley's statement is, in part, as follows:

The frightful cataclysm in Europe has brought this country face to face with tremendous and perplexing problems—commercial, political and industrial. Some of the commercial questions have for years been mulled over and quarreled over, but they have been treated from selfish commercial or selfish political standpoints. Under the present strain, our people are rising to the occasion and dealing with them in a more intelligent and patriotic spirit.

Besides distinctly commercial matters, there are others whose consideration calls for statesmanship of a high order. They concern not only the banker, the merchant and the manufacturer, but also the farmer, the wage earner, the publicist and the humanitarian.

Behind the cry of "Emergency" looms the larger question: "How far shall we substitute governmental action for private enterprise?" Under the pressure of a sudden rise in the cost of many of the necessaries of life came proposals to have the government take over coal mines, packing-houses and flour mills, to purchase ships for transportation purposes, to establish depots where the city would sell food to the people at cost, and to construct municipal dwellings and enter into a large program of road building and reclamation schemes to furnish employment for the idle. A new stimulus has also been given to those who advocate the idea of the Federal Government taking over the railroad, telegraph and telephone systems, and municipalities taking over gas, electric light and street railways. Already government war risk marine insurance is an accomplished fact. Proposals for guaranteeing the price of silver, cotton, wheat, tobacco and even canned salmon and naval supplies appeared suddenly in Congress. Naturally enough, the apple growers' association also began agitating for the government to take care of the apple crop—all "on account of the war." Many advocates of these measures were thinking only of the present crisis, but others seized this opportunity to promote their special philosophy which calls for the government's taking over and doing about everything that is done to-day by private capital. Conceding that there may be emergencies which private enterprise cannot meet and which call for action by the government, the question is: "Where should the line be drawn?" This will be one of the principal subjects to be discussed at the forthcoming annual meeting of the Federation.

The Workmens' Compensation Department will report provisions requisite to adequate workmens' compensation laws, taking into consideration the best features of the statutes now existing in twenty-four States. Its work in the interest of uniformity of State legislation is of great moment now, as forty-one legislatures hold sessions this winter. There will also be brought to the attention of the Federation the necessity for establishing a central bureau for the tabulation of statistics upon amounts paid to injured workmen, cost of insurance to employes and types of accidents most prevalent.

Unemployment during the coming winter may develop into a serious problem. Whatever our governmental policy on that question may eventually be, voluntary effort will count most at this time. While many thrown out of work in the first weeks of the war are again at work and, as order comes out of the chaos into which many industries were so suddenly plunged, much of the trouble is disappearing, it is important to know the extent of unemployment due to the war. On this point, the Federation has sent an inquiry to manufacturers, bankers, trade journals and commercial, charity and labor organizations. It is expected that the replies will be of service to those who are making every effort to reduce unemployment and its resulting distress to a minimum. In this connection, it must not be forgotten that those forces of destruction which have already given us a taste of their revolutionary methods will seek this opportunity to preach their doctrines of class hatred in furthering their propaganda for the overthrow of present social institutions.

In connection with this phase of the question, a special committee will report its conclusions as to the limitations of the free speech and right of assembly clause of the Federal and State constitutions.

A SURVEY OF SOCIAL AND INDUSTRIAL PROGRESS

A report of progress will be made by the Industrial Economics Department of the Federation upon the social and industrial survey which it has been conducting during the past year. The object of the survey is to summarize the changes in our national life and to gather together the essential material from which to judge where there has been an advance in well-being, where there has been a loss, and how far in the aggregate gains and losses balance or outweigh each other.

Meeting of Chicago Northwestern's Safety Congress.—The third annual safety congress of the Chicago Northwestern Railway was held at the La Salle Hotel, Chicago, October 14th, under the auspices of the National Council for Industrial Safety. One delegate from each division, terminal, shop and local safety committee, attended as a guest of the company.

As evidenced by the following resolution of thanks voted unanimously by the delegates to President Gardner and Vice-President Aishton, the men gained much knowledge and information by their attendance at the Congress.

We, the undersigned delegates selected by the various Safety First Committees of the Chicago and North Western Railway to attend the Third Annual Safety Congress held in Chicago on October 14th and 15th, 1914, during which time we have been the guests of the Company, and

Whereas, We have obtained much valuable knowledge and information which will be of

Safety First Men of the Chicago and North Western Railway, Who were Guests of the Company at the Third Annual Safety Congress Held in Chicago on October 14-15.

great help to us in further promoting the Safety First work on the North Western Railway,

Resolved, That we desire to express to President Gardner and Vice-President Aishton our thanks and appreciation of the kindness and consideration shown us in arranging for our attendance and entertainment at said Congress.

Fall Meeting of American Railway Association.—The fall session of the American Railway Association, was held in Chicago on November 18th. Reports were presented by the following committees: The Executive Committee; the Committee on Transportation; the Committee on Maintenance; the Joint Committee on Automatic Train Stops; the Committee on Relations Between Railroads; the Committee on the Safe Transportation of Explosives and Other Dangerous Articles; the Committee on Electrical Working, and the Committee on Nominations.

Fall Meeting of Railway Development Association.—The fall meeting of the Railway Development Association was held in Chicago on November 10th-11th. In opening the meetings an address of welcome was extended by Mayor Carter Harrison of Chicago, which was responded to by F L. LaBaum, of the Norfolk and Western Railway, who is president of the Association. "Personal Work with Farmers," was discussed by N. V. Richards, of the Southern Railway and H. M. Rainer of the Santa Fe System, while "Diversified Farming and its Relation to the Cotton Grower," was dealt with by J. C. Clair, of the Illinois Central and J. F. Jackson of the Central Railway of Georgia. H. B. Fullerton, of the Long Island Railroad, delivered an illustrated address on: "Plans for Increasing the Tonnage of Agriculture for Railroad Transportation." Other subjects presented and discussed were as follows:

"The Relation of Railway Terminals to Industrial Development," by Frank A. Spink, of the Chicago Belt Line and "The Advertising and Exploiting of Industrial Advantageous," by R. W. Cooke, of the Pennsylvania Lines West.

In addition to the above, President LaBaum told of the efforts of the railroads to get city people to engage in farming, L. J. Bricker, of the Northern Pacific, discussed "Desirable Immigration," D. G. Mellor, of the Wells Fargo Express Company and William Gourlay, of the American Express Company, explained how the efficient marketing of farm products could be stimulated and increased and Mrs. Edith Fullerton, vice-president of the Women's Horticultural and Agricultural Association, read a paper on "Country Farm Development," illustrated by lantern slides.

The annual dinner of the Association took place on the evening of November 11th, and addresses were delivered by W. L. Park, vice-president of the Illinois Central Railroad, Samuel O. Dunn, editor of the "Railway Age Gazette" and George A. Blair, assistant freight traffic manager of the Chicago, Milwaukee and St. Paul.

A feature of the meeting was an exhibition of the work of the agricultural, immigration and industrial departments of the railways showing the work on the demonstration farms as well as other features of railroad development activity.

TRAFFIC.

Traffic Through the Panama Canal.—The Panama Canal has now been opened to shipping for a period somewhat over two months and while the European war has undoubtedly greatly retarded the normal movement through this waterway, the record is of interest to all those engaged in commercial pursuits. During the period from

August 15th to October 15th, commercial vessels employing the Canal have carried through it 583,949 tons of cargo. The traffic has followed fairly well defined trade routes, and the course of the great majority of vessels may be roughly classed in four great groups.

The heaviest traffic has been between the Atlantic and Pacific coasts of the United States. Manufactured goods of great variety and general merchandise are carried from the Atlantic seaboard, principally from New York, and secondarily from Boston, Philadelphia and New Orleans, to the principal California and Puget Sound ports; also, to Honolulu. On the eastbound voyage, these vessels carry chiefly canned fruits, vegetables, and salmon, lumber, grain, sugar, pineapples and wine. This trade is restricted to vessels of American registry, and nearly all the American vessels which have used the Canal have been engaged in it. During the period of Canal operation, 24 vessels have passed through eastbound on this route with 151,290 tons, and 25 westbound with 135,214 tons. These passages, 49 in all, have constituted approximately 44 per cent of all the 113 passages through the Canal. The total cargo carried on this route, 286,504 tons, has been almost exactly 50 per cent of all cargo.

A route between the eastern coast of the United States and the west coast of South America has been second in cargo through the Canal. Northbound vessels carry principally nitrates from the fields of Chile, with secondary cargo of raw material products of the western countries of South America, and southbound vessels carry manufactured goods from the United States and Europe. The northbound traffic, passing 13 vessels with 93,139 tons, through the Canal during the two month period, has considerably exceeded the southbound consisting of three vessels with 18,800 tons, and one in ballast, though the latter seems to be getting under way.

There has been a marked, though probably seasonal, traffic from the Pacific ports of the United States and southwest Canada to Europe with grain. Ten vessels, each heavily laden, have gone through eastbound, with 71,560 tons, and eight vessels, all of foreign registry, have gone from the Atlantic to the Pacific in ballast, to return on this route with grain. In addition, one vessel, which went through the Canal with 6,000 tons of manufactured goods, from Antwerp to Tacoma, is to return with grain.

The fourth great route has been from the Atlantic seaboard of the United States to China and Japan, with refined petroleum in bulk and in cases, and other petroleum products. Four vessels have gone through in this trade from the Gulf of Mexico, with 24,931 tons, and four from Philadelphia and New York, with 26,570 tons, an aggregate of 51,501 tons. No vessels have gone in the other direction on this route.

Next to the four principal routes just described, the most notable development has been the coal traffic from the middle Atlantic seaboard of the United States to the Pacific Coast of North and South America. Five vessels, four from Norfolk, with 22,535 tons, and one from Baltimore, with 6,000 tons, have carried coal to the upper Pacific, and one vessel from Baltimore has carried 6,010 tons to Valparaiso. The total coal carried has been 34,545 tons. None of the vessels has returned through the Canal to this time, but it is understood they will load with Pacific coast products for the eastern United States and for Europe.

The development of a line from Liverpool around South America, with vessels sailing both ways, via the Canal, has been arrested by the European war. The only vessel to have used the Canal in this route was the steamship Potosi, which passed through the Canal on September 25th, on its way south, along the west coast of South America. It was held in the bay at Balboa, awaiting orders, but sailed on October 14th.

The steamship Desabla, which passed through the Canal on October 12th, in ballast, was on its way from Rio de Janeiro to San Pedro for a cargo of fuel oil.

The military service of the United States has used the Canal for the passage of one army transport and one navy collier, both from Pacific to Atlantic.

Road Inspection by Passenger Traffic Official.—To see itself as others see it is a plan adopted by the Baltimore and Ohio Railroad in sending an assistant general passenger agent on a 5,000 mile tour of its tracks on an inspector's gasoline tri-cycle to collect first-hand information concerning the degree to which the service meets the requirements of communities, as well as to ascertain the attitude of public opinion and exchange views with patrons, agents of the railroad and others interested in a high standard of transportation facilities.

The trip has been begun by Wm. E. Lowes, assistant general passenger agent at Baltimore, who will be engaged on the work for several months as weather conditions permit and who will compile a report for the information and records of the general officers. Accompanied by a photographer and a supervisor of tracks, Mr. Lowes has covered a portion of the main line and branches of the eastern divisions on his scouting expeditions.

Garbed for roughing it, with baggage forwarded ahead and carrying only such necessary articles as a dispatcher's schedule of trains to be met and passed and a notepad, camera and box lunch, the main line of the Shenandoah Valley from Harper's Ferry to Lexington and the line along the south branch of the Potomac River from Green Spring to Petersburg, W. Va., have been traveled over. Also the territory in eastern Ohio from Zanesville to Marietta has been visited, and in these sections a number of exquisite photographs of historical interest and scenic beauty was made and will be used for advertising purposes.

It is impossible to set a time when the tour of observation and education will be completed and a report submitted to the Baltimore and Ohio officials, as progress on the work will be governed by local conditions in the communities visited. Up to this time it has been possible to travel from fifty to sixty miles a day, stopping to talk over business conditions with agents at small stations, as well as to farmers in the fields and workmen in industries along the route. The gasoline tri-cycle used by the officials is operated through communication with the train dispatcher and train crews are advised to be on the lookout for it in order to minimize the danger of accident.

When visiting a small agency, Mr. Lowes discusses the service with the agent, examines the station and offers and receives suggestions as to the needs of patrons. From farmers he obtains information concerning the fertility of soil and its adaptability to particular phases of farming, learns the yield per acre in the community and the amount of fertilizer, farming machinery and articles shipped in; and in turn such information as the most available market paying top prices for farm products is imparted. If further assistance be desired by the farmers, the matter is taken up with agricultural department of the railroad. The capacity of industries, number of persons employed, markets for the output and source of raw materials is ascertained from those in charge, and a desire for further information is communicated to the industrial department. In this way the railroad is adopting an effective way of placing the co-operation of its various departments concerned with the development of business at the service of those desiring such assistance.

Solving the Traffic Problems of the Panama-Pacific International Exposition.—The exposition is provided not only with its own standard gauge railway leading into all the main exhibit palaces, but it has its own freight and passenger ferry slips. The efficiency of its traffic system was early demonstrated in the transportation of all the building materials that have gone into the construction of the exposition; this included, among other items, some eighty million board feet of lumber and forty thousand tons of plaster for the main exhibit section alone.

The capacity of the exposition railway system will admit of the receiving and unloading of fifty carloads of exhibits a day during the busiest season. It is possible to dispose of one car float an hour, or between four thousand and five thousand cars per month.

It is estimated that between seventy and eighty thousand tons of exhibits will be transported to the exposition and the first exhibits reached San Francisco as early as last May. More than eleven hundred tons of exhibits were received from Japan alone in October.

By arrangement with the railroad companies all exhibits are carried at half rates; that is, the full rate is charged from the shipping point to the exposition, but the return carriage is free. To accommodate the exposition freight and passenger traffic many of the railroads have made extensions and enlargements along their routes, improvements which are justified by the estimated expenditure of $5,000,000 in freight for exhibits and $125,000,000 for passenger fares during 1915.

Wheat Exports for Three Months' Period.—Large exports of domestic wheat in the three months which ended with September, 1914, brought the total for that period up to the highest point ever reached in the corresponding months of any year in the history of our export trade. The total exports of wheat, including flour in terms of wheat, in the first quarter of the current fiscal year aggregated 89¼ million bushels, as against 59 million in the corresponding period of last year and 83 million in the July-September quarter of the fiscal year, 1902, when exports of domestic wheat rose to their previous highest level. In the fiscal year 1902, the total was 234,772,515 bushels. Figures published in the "Monthly Summary of Foreign Commerce" by the Bureau of Foreign and Domestic Commerce of the Department of Commerce show that the exports of wheat in the quarter which ended with September last, exceeded those of the complete fiscal years 1910, 1911 and 1912.

Most of this greatly increased exportation of domestic wheat was distributed to European countries, September alone showing consignments of wheat, exclusive of flour, in the following amounts: To France, 7,572,000 bushels; the United Kingdom, 6,640,000; the Netherlands, 2,201,000; and other Europe, 5,390,000. Over 2,560,000 bushels were exported last month to Canada, while a very unusual transaction was the shipment of 580,000 bushels of wheat from Port Arthur, Texas, to Brazil. The notable feature

COMMUTERS RAILWAY, PANAMA-PACIFIC INTERNATIONAL EXPOSITION GROUNDS, FROM THE OAKLAND SIDE OF SAN FRANCISCO BAY.

in the outward movement of flour was the marked gain in shipments to Brazil and other countries of South America. Exports thereto in September were nearly double those of a year ago, while the aggregate to foreign countries as a whole showed practically no change.

In addition to largely increased exports, the outbound movement of other grains and grain products as well as of meats and other articles of food, showed a heavy increase during September as compared with similar movements for the corresponding month in 1913. Exports of fresh beef for example, during the month, amounted to more than 7,000,000 pounds or eleven times the total for September, 1913. More than 6,000,000 pounds of this amount went direct to France. In addition, practically 3,000,000 pounds of canned beef were exported, being eight times as much as in the same month of last year, and far above the average level for the past decade.

EQUIPMENT.

New Inter-Locking Plant for Southern Railway.—Southern Railway has begun the installation of a modern inter-locking plant at Helena, Ga., where the tracks of its Atlanta Division, over which its fast through trains between Florida and the West move, cross the tracks of the Seaboard Air Line. This improvement will remove the possibilities of a collision at this crossing and will also facilitate train operations through Helena.

At the intersection of the two lines a tower is being built from which the signals and switches will be operated. Derails will be installed on all the tracks, and the plant will also include distant signals operated by power from the interlocking plant and annunciators which will automatically inform the tower operators of the approach of trains.

New Steel Postal Cars for the Rio Grande.—Ten new all-stel combination mail and baggage cars have just been purchased by the Denver & Rio Grande Railroad and are now in service on that road in through runs between Denver, Salt Lake City and Ogden. The cars are of the latest type in every particular and are built in strict accordance with specifications recently adopted as standard for mail cars by the Federal Government, being 70 feet long inside, 30 feet of which is taken up as mail room and 40 feet for baggage. The interior fittings are of steel design with the most modern appliances for heating, lighting and ventilation and are equipped with all-steel trucks, steel wheels and high speed brakes.

Installation of Automatic Electric Block Signal System on Southern Railway.—The Southern Railway has completed the installation of an automatic electric block signal system on the double track line between Knoxville and Morrisville, a distance of 42 miles, thus providing the most modern protection for one of the most important lines on the Southern Railway System, over which are handled the through trains between Memphis and New York, between New Orleans, Birmingham, Chattanooga and New York, and a large part of the travel to Asheville and other Carolina resorts.

Signals have been erected at intervals of about two miles. A train immediately in advance of a signal or in the first block will cause it to indicate DANGER or STOP and at night show a red light. A train in the second block ahead will be indicated by the signal standing in the CAUTION position and showing a green light at night. If the track is clear of all trains for at least a distance of four miles or two blocks the signal will indicate CLEAR with a white light at night.

In addition to indicating the presence of a train in either the first or second blocks, the signal will also stand in the danger position if there should be an open switch, a broken rail, bridge out, or any other obstruction which would endanger the safety of trains, thus providing a very large measure of safety by giving the engineer advance information of conditions ahead.

CONSTRUCTION.

Northern Pacific Completes Through Line to Eureka.—On October 23rd, President W. S. Palmer, of the Northwestern Pacific, which line is owned jointly by the Southern Pacific and Atchison, Topeka and Santa Fe, swung the silver hammer on the gold spike that completed the Northwestern Pacific's through line from San Francisco to Eureka, Cal. The occasion was one of great rejoicing, for, previous to Friday, Eureka held the distinction of being the largest city in the United States not enjoying railroad connection with the outside world.

The spike-driving ceremony took place at Cain Rock Bridge. It was attended by Mayor Clark of Eureka, Mayor Rolph of San Francisco, executive officials of the Southern Pacific and Santa Fe, and representatives of practically all the important cities and towns of California.

The work of connecting up the southern and northern portions of the system has been under way for seven years, involving an expenditure of $12,000,000, and representing one of the most formidable feats of railroad construction ever undertaken in the United States. The length of new construction is 105 miles, of which there are 59 miles of curved track and 46 miles of straight. The Northern Pacific has a total mileage of 550. It has 28 tunnels, in the lining of which there are 12,000,000 feet of lumber. The maximum grade, eastbound, is three-tenths of one per cent; westbound, seven-tenths of one per cent.

The total amount of bridge steel between Willits and Shively is 10,286,312 pounds, distributed among 23 bridges. The longest bridge, the Cain Rock crossing of Eel River, is 1115 feet in length; the shortest bridge, across Woodman Creek, is 50 feet in length. The aggregate steel bridge length is 7001 feet.

FOREIGN RAILWAYS.

Government Ownership in Russia Unsatisfactory.—Had Russia's government railways been operated as economically in 1910 as were her private lines the saving in operating expenses would have exceeded $37,000,000. Such a discrepancy in comparative efficiency of state and private railway operation in Russia is brought out in the annual report for 1910.

Private companies in European and Asiatic

Russia operate 13,256 miles of railway against 28,366 miles operated by the state. In 1910 these companies paid out $59 to operate, for every $100 received in gross revenues. Against this showing the state railways spent $70. Moreover, whereas in 10 years since 1901 the private companies effected a reduction in operating expenses from $68 for every $100 revenue to $59, a saving of over 13.2 per cent, the state railways in the same time contracted their expenses only 1.4 per cent, from $71 to $70. With over $342,000,000 in gross business the government railways would have saved exactly $37,644,903 had they equalled the private companies' performance.

Overstaffing of the government railways is largely responsible for this unfavorable showing. Whereas the private companies handle a relatively larger traffic, $12,989 per mile against $12,426 on the government roads, they accomplished the work with only 169 employes for every 10 miles against 203 for every 10 miles on the state railways. Even more striking than this discrepancy is the gap between Russia's most efficient roads and railways of the United States, which in 1910 operated with only 70 employes for every 10 miles of line.

During the entire year 1910 Russia, with an area almost three times that of the United States, added only 40 miles to operated railway mileage, leaving her with 41,622 miles of railway, or only one-half mile per 100 square miles of territory, against over 8 miles in the United States. This left the United States sixteen times as well provided with railways as Russia in relation to territory. Since 1910, however, Russia has awakened to the need of railways and a large mileage is now under construction.

Despite their inferiority in every detail of equipment this Russian system cost in 1910, almost $22,000 per mile more than our own. Capital per mile stood at $84,299, against which the railways of the United States, often accused of over-capitalization, had produced the most efficient transportation system in the world at a cost of less than $63,000 per mile.

Comparison of rates charged in the two countries likewise demonstrates the efficiency of the United States railway system, for with higher cost of materials, wages four times those paid to Russian railway employes, and with the value of the cent correspondingly higher in Russia than in this country, United States railways received only 0.75 cents per ton mile against 0.94 cents received by Russian carriers. Average receipts per passenger mile were only one-third ours, but 91.5 per cent of the travel was third and fourth class against one-half of one per cent first class. One day's wage, 70.5 cents, will buy 103 miles of this third and fourth class travel in Russia against 124 miles of first class travel for a day's wage in the United States.

Railway Construction in Canada.—What the railroads of Canada are accomplishing in the way of construction during this year of abnormal conditions is revealed in a series of official communication secured by your correspondent from the Canadian Pacific, Grand Trunk and Canadian Northern Railway companies.

As regards the Canadian Pacific Railway, the programme of construction for 1914 was restricted almost entirely to the laying of steel on grading which had already been completed. The only major operation was the driving of the tunnel at Glacier in the Selkirks. The work in this tunnel is continuing as usual, the position early in September being that the pioneer heading at the east end was driven in over 4,000 feet and at the west end over 1,000 feet. The main heading was advanced over 1,500 feet at the east end and about one-third of that at the west end.

Construction on the Vancouver Hotel continues uninterrupted. A large amount of steel has been laid but the work for the year is practically complete. Trains have been for some time in operation on the new double track between McLean and Indian Head.

The Kootenay Bay extension of the Esquimault and Nanaimo Railway was opened for traffic in August and no halt has been called on the construction of the Kootenay Central in the Upper Columbia Valley.

What is being done in the west is indicated more fully in an interview with Mr. F. W. Peters, general superintendent of the Western Division of the C. P. R. "As far as I know," said he, "there will be no interruption in construction work. That at the Vancouver terminals is virtually finished as well as the double tracking between Vancouver and Revelstoke. About 3,500 ment are engaged on the Kettle Valley Line and a good force is working on the five-mile tunnel through the Selkirks, near Glacier. We expect to have the Kettle Valley line connected with Vancouver next year. This will be beneficial, of course, to the southern sections of the province. It will provide a new and important outlet for the fruits and other agricultural products and will open up promising mining areas which have been undeveloped thus far owing to inadequate transportation facilities.

"Our grounds for high expectations are solid. They are based upon the immense natural wealth of this country, coupled with steadily improving means of developing this wealth and transporting it to the big markets. The embarrassments of the present cannot last long. For instance, it has been found necessary, because of conditions growing out of the war, to cancel the through freight rate from transatlantic ports to Western Canada. But I do not believe this situation is more than temporary. With the passing of the possible menace to shipping on the Atlantic, the conditions in my judgment will lead to new records of commerce between Canada and the British Isles. Our shipping on the Pacific has fallen off because the government has taken the "Empress of Russia," the "Empress of Asia" and the "Empress of Japan" for purposes of war, but with Japan aiding in the protection of British commerce in the Pacific, we hope and expect that it will not be long before these vessels will not be needed and can be returned to the activities of peaceful trade."

The official statement of work on the Grand Trunk Pacific reads as follows: "We are still ballasting west of Prince George over about 125 miles with a final lift and it is expected that this work will be completed about the 15th of November. Half ballasting has been completed over this part of the line and the work will not be discontinued until the same is completed. The bridge work is about completed on the Prince Rupert end. The only construction work yet to be completed and now under contract, is the erection of the divisional point facilities at Endako, Smithers and Pacific. With the completion of this work the Main Line will be in perfect operating condition from Fort William to the Pacific."

As for the Canadian Northern, there are now only 195 miles in the whole Main Line which are yet untracked. Nearly all of this is graded. The gap in British Columbia trackage amounts to about 163 miles and about 32 miles between Sudbury and Montreal. The Sudbury-Port Arthur section, running about the head of Lake Superior is now ready for operation, while the section from Toronto to Quebec has been in operation for many months. Every effort of the company, which has a working force of nearly eight thousand men, is being directed at completing the Main Line, and the Sir William Mackenzie estimates that the last rail will be laid some time in December or January at a point in British Columbia. By June, of 1915, passenger and freight trains will be run from tidewater to tidewater.

RESIGNATIONS.

Executive.

W. A. Bissell, president, San Francisco-Oakland Terminal Railways.

E. N. Brown, president and director, National Railways of Mexico.

W. E. Minega, president and general manager, Virginia,Carolina Railway and the New River, Holston & Western Railway.

J. E. Votaw, vice-president and general manager, Marshall and East Texas Railway.

Financial.

James Moore, paymaster, Atchison, Topeka & Santa Fe Railway.

E. W. Potts, treasurer, Virginia-Carolina Railway and the New River, Holston and Western Railroad.

Accounting.

T. V. Coleman, auditor, Red River and Gulf Railroad.

D. B. Keiser, car accountant, Galveston, Harrisburg & San Antonio, the Texas and New Orleans, the Houston & Texas Central, the Houston East and West Texas and the Houston & Shreveport railroads.

E. B. Pierce, auditor, Missouri, Kansas and Texas Railway.

Engineering and Mechanical.

K. W. Collister, supervisor, Fourth Division, Erie Railroad.

A. G. Kantman, superintendent of machinery, Nashville, Chattanooga and St. Louis Railway.

Operation.

R. B. Ayres, superintendent, Transcontinental Division, Texas and Pacific Railroad.

T. E. Coyle, superintendent, Northern Pacific Railway.

Traffic.

A. E. Billings, division freight agent, Lake Shore and Michigan Southern Railway.

W. F. Bosald, agent, Lehigh Valley Railroad.

E. J. Cabaret, traveling freight agent, Atlanta, Birmingham and Atlantic Railroad.

M. H. Dorsett, traveling freight agent, Nashville, Chattanooga and St. Louis Railway.

H. G. Elliott, general passenger agent, Grand Trunk Railway.

T. F. Frome, agent, Lehigh Valley Railroad.

F. D. Lamkin, agent, Lehigh Valley Railroad.

C. W. Nash, freight claim agent, Delaware & Hudson Railroad.

H. Osborn, commercial agent, Cincinnati, New Orleans and Texas Pacific and Alabama Great Southern Railroads.

P. F. Spaker, agent, Lehigh Valley Railroad.

R. A. Taylor, freight claim agent, Galveston, Harrisburg & San Antonio, the Texas & New Orleans, the Houston & Texas Central, the Houston East & West Texas, and the Houston & Shreveport railroads.

C. S. Wilkins, superintendent of transportation, Coal & Coke Railway.

S. A. Williams, commercial agent, Cincinnati, New Orleans and Texas Pacific and the Alabama Great Southern Railroads.

Purchasing.

H. C. Hequembourg, general purchasing agent, American Locomotive Company.

ELECTIONS AND APPOINTMENTS.

Executive.

W. H. Biggar, vice-president and general counsel, Grand Trunk Pacific. Headquarters, Montreal, Que.

P. E. Clark, president, Tennessee, Kentucky and Northern Railroad. Headquarters, Nashville, Tenn.

J. W. Evermann, first vice-president, St. Louis Southwestern Railway. Headquarters, Tyler, Texas.

E. W. Grice, assistant to president, Chesapeake and Ohio Railroad. Headquarters, Richmond, Va.

George P. Johnson, president, Virginia-Carolina and the New River, Holston & Western railroads.

A. W. Lefeber, vice-president and general manager, Midland Valley Railroad. Headquarters, Muskogee, Okla.

T. C. McCampbell, vice-president, Tennessee, Kentucky and Northern Railroad. Headquarters, Nashville, Tenn.

Edward Raymond, assistant to vice-president, Atchison, Topeka and Santa Fe Railway. Headquarters, Chicago, Ill.

Walter L. Ross, receiver, Toledo, St. Louis and Western Railroad. Headquarters, Toledo, Ohio.

Samuel C. Scotten, director, the Burlington Route.

Bryan Snyder, vice-president and general manager, Marshall and East Texas Railroad. Headquarters, Marshall, Texas.

G. K. Weeks, president, San Francisco-Oakland Terminal Railways. Headquarters, Oakland, Cal.

Fred Zimmerman, vice-president, Chicago, Indianapolis and Louisville Railroad. Headquarters, Chicago, Ill.

Legal.

C. G. Austin, general solicitor, Chicago & Western Indiana Railroad and the Belt Railway of Chicago. Headquarters, Chicago, Ill.

Financial.

J. H. Ambrose, treasurer, Nashville, Chattanooga and St. Louis Railway. Headquarters, Nashville, Tenn.

T. W. Arundel, assistant treasurer and secretary, Chicago and North Western Railway. Headquarters, New York.

Thomas A. Clarkson, secretary, Nashville, Chattanooga & St. Louis Railway. Headquarters, Nashville, Tenn.

J. S. Crowell, secretary and general superintendent, Red River and Gulf Railroad. Headquarters, Long Leaf, La.

Arthur S. Pierce, treasurer and assistant secretary, Chicago and North Western. Headquarters, New York.

W. C. Reichenbach, paymaster, Atchison, Topeka and Santa Fe Railway. Headquarters, Topeka, Kansas.

H. W. Rush, assistant treasurer and assistant secretary, Chicago and North Western Railway. Headquarters, New York.

Accounting.

G. F. Buskie, auditor, Missouri, Kansas and Texas Railroad. Headquarters, St. Louis, Mo.

J. W. Comiskey, car accountant, Galveston, Harrisburg & San Antonio, the Texas & New Orleans, the Houston & Texas Central, the Houston East and West Texas and the Houston & Shreveport. Headquarters, Houston, Texas.

Earl B. Leach, auditor, Texas City Terminal Company. Headquarters, Texas City, Texas.

H. A. White, auditor and general manager, Red River and Gulf Railroad. Headquarters, Long Leaf, La.

A. R. Wood, assistant auditor, San Antonio & Aransas Pass Railway. Headquarters, San Antonio, Texas.

Engineering and Mechanical.

R. B. Ball, engineer, Grand Division, Atchison, Topeka and Santa Fe Railway. Headquarters, Los Angeles, Cal.

Joseph Billingham, superintendent of motive power, Grand Trunk Pacific. Headquarters, Transcona, Man.

R. H. Boykin, division engineer, The Erie Railroad. Headquarters, Marion, Ohio.

A. C. Bradley, division engineer, Oklahoma Division, Chicago, Rock Island and Pacific. Headquarters, El Reno, Okla.

J. L. Cantwell, general foreman, Southern Railway. Headquarters, Asheville, N. C.

J. A. Cassady, master mechanic, Cincinnati, New Orleans and Texas Pacific. Headquarters, Somerset, Ky.

W. D. Cloud, assistant signal supervisor, Coast Lines, Atchison, Topeka and Santa Fe Railway. Headquarters, Los Angeles, Cal.

J. S. Considine, supervisor, Pennsylvania Railroad. Headquarters, Buffalo, New York.

A. J. Cunningham, inspector of motive power, Pacific District, Atchison, Topeka and Santa Fe Railway. Headquarters, Barstow, Cal.

J. R. Donnelley, assistant master mechanic, Ontario lines, Grand Trunk Railway System. Headquarters, Allandale, Ont.

C. Dougherty, roadmaster, Atchison, Topeka and Santa Fe Railway. Headquarters, Plainview, Texas.

H. B. Hayes, master mechanic, Alabama Great Southern Railroad. Headquarters, Birmingham, Ala.

J. D. Lovell, supervisor, Pennsylvania Railroad. Headquarters, East Brady, Pa.

T. McHattie, master mechanic, Eastern Lines, Grand Trunk Railway System. Headquarters, Montreal, Que.

G. F. McKenzie, roadmaster, Houston and Texas Central Railroad. Headquarters, Corsicana, Texas.

J. Markley, master mechanic, Grand Trunk Railway. Headquarters, Toronto, Ont.

C. D. Meily, yardmaster, Great Northern Railroad. Headquarters, Cut Bank, Mont.

Cyrus Miller, roadmaster, Atchison, Topeka and Santa Fe Railway. Headquarters, Moline, Kan.

R. R. Nace, supervisor, office of valuation engineer, Pennsylvania Railroad. Headquarters, Philadelphia, Pa.

A. D. Pinkerton, principal assistant engineer, Louisville & Nashville Railroad. Headquarters, Louisville, Ky.

N. B. Pitcairn, supervisor, Pennsylvania Railroad. Headquarters, Chambersburg, Pa.

W. H. Sample, master mechanic, Western lines, Grand Trunk Railway. Headquarters, Battle Creek, Mich.

J. J. Sullivan, superintendent of machinery, Nashville, Chattanooga and St. Louis Railroad. Headquarters, Nashville, Tenn.

H. S. Trimble, supervisor, Pennsylvania Railroad. Headquarters, Driftwood, Pa.

Operation.

H. Adkins, general manager, Tennessee, Kentucky and Northern Railroad. Headquarters, Nashville, Tenn.

H. W. Buskirk, assistant manager, Continental Lines and the Central States Dispatch. Headquarters, Cincinnati, Ohio.

S. T. Cantrell, assistant superintendent, Monongah Division, Baltimore and Ohio Railroad. Headquarters, Grafton, W. Va.

W. E. Cline, chief train despatcher, Canadian Pacific. Headquarters, Edmonton, Alta.

L. M. Dooley, superintendent, Rio Grande Division, Texas and Pacific Railway. Headquarters, Big Spring, Texas.

C. W. Fisher, chief train despatcher, Canadian Pacific. Headquarters, Lethbridge, Alta.

E. P. Goodwin, superintendent of freight transportation, Chesapeake and Ohio Railroad. Headquarters, Richmond, Va.

C. A. Grimsley, superintendent, Northern Division, Florida East Coast Railroad. Headquarters, New Smyrna, Fla.

R. M. Johnson, superintendent of transportation, Coal and Coke Railway. Headquarters, Gassaway, W. Va.

Frank T. Kilvington, assistant trainmaster, Philadelphia, Baltimore and Washington Railroad. Headquarters, Wilmington, Del.

F. A. Lehman, general superintendent, eastern lines, Western District, Atchison, Topeka and Santa Fe Railroad. Headquarters, Newton, Kans.

T. S. Mahoney, superintendent, Transcontinental Division, Texas and Pacific Railway. Headquarters, Texarkana, Texas.

F. T. Milligan, train despatcher, Great Northern Railroad. Headquarters, Spokane, Wash.

J. C. Morrison, superintendent of dining cars and hotels, Oregon-Washington R. R. & Navigation Company. Headquarters, Portland, Oregon.

E. C. Penn, chief despatcher, Virginian Railway. Headquarters, Princeton, W. Va.

John M. Rapelje, general manager, Northern Pacific Railway. Headquarters, St. Paul, Minn.

A. N. Stroud, trainmaster, Utah Division, Oregon Short Line. Headquarters, Salt Lake City, Utah.

Nile Shaw, chief despatcher, Great Northern Railroad. Headquarters, Whitefish, Mont.

Walter T. Spencer, superintendent, Old Colony Division, New York, New Haven & Hartford Railroad. Headquarters, Taunton, Mass.

W. T. Tyler, division superintendent, Northern Pacific Railroad. Headquarters, Pasco, Wash.

C. C. Walker, superintendent of passenger transportation, Chesapeake and Ohio Railroad. Headquarters, Richmond, Va.

A. N. Williams, trainmaster, Chicago, Rock Island & Pacific Railroad. Headquarters, Estherville, Iowa.

A. B. Woodward, chief train despatcher, Great Northern Railroad. Headquarters, Havre, Mont.

Traffic.

R. J. Bailey, agent, Lehigh Valley Railroad. Headquarters, Mortimer, N. Y.

D. G. Black, general agent, Great Northern. Headquarters, St. Louis, Mo.

J. S. Carter, district passenger agent, Canadian Pacific Railway. Headquarters, Nelson, B. C.

H. D. Chamberlain, acting freight claim agent, Delaware & Hudson. Headquarters, Albany, N. Y.

George B. Clayman, agent, Lehigh Valley Railroad. Headquarters, Rochester Junction, N. Y.

E. P. Cockrell, general passenger agent, Chicago, Indianapolis and Louisville Railroad. Headquarters, Chicago, Ills.

Robert W. Dowe, live stock agent, International & Great Northern Railway. Headquarters, Eagle Pass, Texas.

L. R. Everett, general agent, Atchison, Topeka and Santa Fe Railway. Headquarters, Santa Barbara, Cal.

George W. Frank, traveling freight agent, Cincinnati, New Orleans and Texas Pacific and Alabama Great Southern railroads. Headquarters, Cincinnati, Ohio.

B. G. Gasner, traveling freight agent, Queen and Crescent Despatch. Headquarters, Cincinnati, Ohio.

J. W. Gerow, traveling passenger agent, Atlantic Coast Line Railroad. Headquarters, St. Petersburg, Fla.

H. C. Hamilton, general freight agent, Lehigh Valley Railroad. Headquarters, New York.

J. W. Hanners, agent, Lehigh Valley Railroad. Headquarters, Flemingville, N. Y.

Herbert F. Harden, commercial agent, Queen and Crescent Route. Headquarters, Indianapolis, Ind.

C. N. Haughton, agent, Lehigh Valley Railroad. Headquarters, South Bay, New York.

T. H. Harrison, traveling freight agent, Nashville, Chattanooga and St. Louis Railroad. Headquarters, Jacksonville, Fla.

G. B. Herbett, freight claim agent, Galveston, Harrisburg & San Antonio, the Texas & New Orleans, the Houston & Texas Central, the Houston East and West Texas and the Houston and Shreveport Railroads. Headquarters, Houston, Texas.

John G. Hill, commercial agent, Cincinnati, New Orleans and Texas Pacific and Alabama Great Southern Railroads. Headquarters, Chicago, Ill.

F. D. Hurst, division freight agent, Lake Shore and Michigan Southern and Dunkirk, Allegheny Valley & Pittsburgh Railroads. Headquarters, Youngstown, Ohio.

W. N. Jones, claim agent, Western Division, Chicago and Alton Railroad. Headquarters, Mexico, Mo.

Frank Koch, general agent, freight traffic department, International and Great Northern Ry. Headquarters, New Orleans, La.

P. C. Meyer, agent, Lehigh Valley Railroad. Headquarters, South Somerville, N. J.

John A. Miller, district freight and passenger agent, Great Northern. Headquarters, Bellingham, Wash.

C. B. Michelson, marketing agent, St. Louis and San Francisco. Headquarters, St. Louis, Mo.

J. J. Miller, soliciting freight agent, Queen and Crescent Route. Headquarters, Jacksonville, Fla.

E. W. Milm, commercial agent, Queen and Crescent Route. Headquarters, Pittsburgh, Pa.

Logan A. Mizener, general agent, Chicago, St. Paul, Minneapolis and Omaha. Headquarters, Sioux City, Iowa.

J. J. Monks, general agent, Lake Shore and Michigan Southern and Dunkirk, Allegheny Valley & Pittsburgh Railroads. Headquarters, Pittsburgh, Pa.

G. L. Oliver, assistant general freight and passenger agent, Ft. Smith & Western R. R. and the St. Louis, El Reno & Western Ry. Headquarters, Ft. Smith, Ark.

Thomas G. Orr, traffic manager, Pittsburgh and Butler Railway.

F. L. Perkins, New England freight agent, Missouri Pacific Railway. Headquarters, Boston, Mass.

J. R. Philips, traveling freight agent, Atlanta, Birmingham & Atlantic Railroad. Headquarters, St. Louis, Mo.

J. W. Piatt, commercial agent, Queen and Crescent Route. Headquarters, Meridian, Miss.

A. D. Pinkerton, commercial agent, International and Great Northern Railway. Headquarters, Galveston, Texas.

W. P. Potter, general passenger agent, Illinois Traction System. Headquarters, Springfield, Ill.

R. K. Pretty, agent, Great Northern. Headquarters, Seattle, Wash.

H. C. Pribble, general freight claim agent, Atchison, Topeka and Santa Fe Railroad. Headquarters, Topeka, Kansas.

Joel L. Priest, general agent, Oregon Short Line. Headquarters, Boise, Idaho.

G. M. Schaefer, general agent, Washington Railroad. Headquarters, Portland, Oregon.

W. L. Schneider, inspector of transportation, Delaware & Hudson Company. Headquarters, Albany, N. Y.

John J. Scully, soliciting freight agent, Cincinnati, New Orleans and Texas Pacific and Alabama Great Southern Railroads. Headquarters, Cincinnati, Ohio.

H. L. Shepherd, foreign freight agent, Chicago, Rock Island & Gulf Railway. Headquarters, Galveston, Texas.

Clarence E. Stone, general traffic manager, Great Northern Pacific Steamship Company. Headquarters, San Francisco, Cal.

Samuel A. Story, assistant general freight agent, Lehigh Valley Railroad. Headquarters, Buffalo, N. Y.

C. D. Thompson, general agent, Great Northern Railroad. Headquarters, Spokane, Wash.

B. J. Torbron, division freight agent, Lake Shore and Michigan Southern and Dunkirk, Allegheny Valley & Pittsburgh Railroads. Headquarters, Toledo, Ohio.

E. P. Vernia, division freight agent, Chicago, Indianapolis & Louisville Railroad. Headquarters, Bradford, Ind.

C. G. Wakeley, special agent, Florida East Coast Railroad. Headquarters, St. Augustine, Fla.

W. T. Webster, general freight agent, Chicago, Indianapolis and Louisville Railroad. Headquarters, Chicago, Ill.

J. L. White, agent, Lehigh Valley Railroad. Headquarters, Waterloo, N. Y.

H. W. Winter, Jr., agent, Lehigh Valley Railroad. Headquarters, West Portal, N. J.

Charles M. Woodman, assistant passenger agent, Chicago, Indianapolis and Louisville Railway. Headquarters, Chicago, Ill.

Industrial.

M. V. Richards, commissioner in charge of the industrial and agricultural department, Southern Railway. Headquarters, Washington, D. C.

Purchasing.

A. E. Yuill, tie and timber agent, Canadian Northern. Headquarters, Toronto, Ont.

FOREIGN RAILWAYS.

First Alaskan Railway.—Up to 1898, men who wished to get to the gold diggings along the Yukon River by way of the White Pass had two choices: to pack their own supplies in from Skagway to Lake Bennett, or to pay freighters' rates that often climbed to $1 a pound, writes Aubrey Fullerton in the Bellman. On this same route, Alaskan railroading began in the spring of 1898, and in seven weeks from the turning of the first sod a train was run for four miles out of Skagway. That was the first of many achievements in northern roadmaking, wherein time records were broken and things done that seemed impossible. The road was finished to White Horse in the summer of 1900.

It was not only that this pioneer railroad ran through a mountain country that made its construction so difficult, but that it also was so far north. This meant that it was a thousand miles from the base of supplies ,and every piece of equipment and every tool had to be taken up the coast from Seattle and Vancouver and freighted into the hills. Moreover, this was before the days of northern telegraphs, and the isolation of the road builders was complete. The project was declared by some to be a piece of folly. But they didn't know the man in charge of it, one Hawkins.

On the way to the summit at White Pass the grade, which averages 2.66 per cent, was cut through solid rock. At one point a cliff 200 feet from top to bottom blocked the way, and the whole mass of it was cleared out with powder. Often the grade went up mountain sides so steep that Hawkin's men were suspended by ropes while they drilled the holes for blasting, the like of which had never before been seen in the Alaskan hills.

When it came to boring a tunnel the difficulties were multiplied almost impossibly. The machinery and supplies were packed up a steep, high grade that only mountain climbers could make. But the hole was made, 250 feet long, and the road went through. A steel cantilever bridge, costing $100,000, was thrown over a V-shaped canon a short distance from the summit, 215 feet above the creek bed.

Notwithstanding numerous physical obstacles and such difficulties as the lure of gold "finds," which in one case called away 1500 men in a few days, the road was built to the summit of White Pass, 3000 feet above the sea level. While the gold rush was on, the traffic was heavy, then the road began to attract the sightseers and now it is a tourist road, as well as a freight line to the gold fields.

DIVIDEND NOTICE.

Philadelphia Electric Company, 419 Market Street,

Camden, N. J., Nov. 12, 1914. The Board of Directors have this day declared a quarterly dividend of one and three-quarters (1¾) per cent. (being 39.375 cents a share) upon the paid in capital of the Company, payable Dec. 15, 1914, to stockholders of record Nov. 20, 1914.

H. C. LUCAS, Treasurer.

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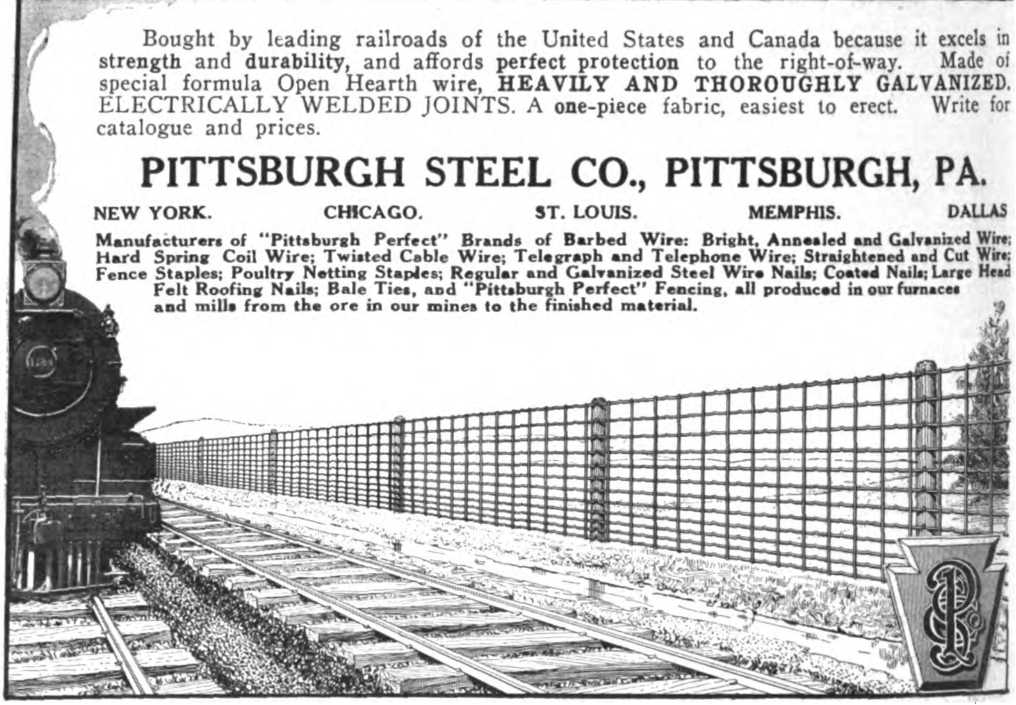

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Railway World

VOL. LVIII. DECEMBER, 1914 No. 12

Important Developments in the Transportation Field

INTERSTATE COMMERCE COMMISSION GRANTS RATE INCREASE

By a vote of five to two the Interstate Commerce Commission has granted the application of the railroads in Official Classification territory for an increase in rates. The decision awards the carriers 5 per cent on everything but coal and iron ore, and is expected to add nearly $50,000,000 a year to revenues of the lines east of the Mississippi and north of the Potomac and Ohio rivers.

The only exceptions made are those which were expected by the railway managers. Increases on bituminous coal and coke were denied because of the recent investigation, as a result of which maximum rates were prescribed. The advances on anthracite coal and iron ore are not allowed, because they are before the Commission for review in other proceedings. Rail-lake-and-rail, lake-and-rail and rail-and-lake rates are not to be changed, because the carriers have increased the rates by water and so lessened the differences between the combination and the all-rail charges. Rates which are governed by unexpired orders of the Commission are not to be changed.

But, on the other hand, the railroads received an unexpected award in being granted permission to raise rates on cement, starch, brick, tile, clay and plaster in Central Freight Association territory. The Commission now allows these rates to be increased throughout Official Classification territory, although they were excepted by the decision of July 29 from the increases allowed in the Central territory.

The "Merry Christmas" which the Commission extends to the Eastern roads has almost none of the unpleasant qualities which were contained in two previous decisions. That the board fully appreciated the urgency of the situation created by the war, and to which attention was called by President Wilson in his letter to Frank Trumbull, following the visit to him of the committee of railway men, is shown by the dispatch with which an agreement was reached. The evidence was not put into the Commission's hands until October 30, and but 39 business days elapsed before the final proofs of the findings were formally signed.

The decision is almost a sweeping victory for the railroads, for not only are all of the increases allowed, but the Commission suspends its rule requiring the filing of new tariffs 30 days in advance of the date on which they are to go into effect in order to make the relief available at the earliest moment. The order authorizes the roads to put the higher rates into effect on 10 days' notice.

Chairman Harlan wrote a supplementary and dissenting opinion, in which he concurs with the majority of the board in the view that the roads are in need of more revenue, but takes issue with the way in which it is to be gained. He expresses the view that the carriers need more than a $50,000,000 increase in their net revenue, but says that they have not, either in the original hearing or on the reopened case, made any effort to show that the scale of through rates as measured by the 5-cent on first-class traffic from New York to Chicago is unduly low or that higher through rates would be fair. He still stands for the remedy proposed in the decision of July 29: A revision of rates and the ending of practices that are unremunerative.

Commissioner Clements was bitterly opposed to the award made by his colleagues, on the ground that the roads did not justify the advances. He regards this decision as overturning the approved practice of the Commission in previous cases and as opening the door to great abuses. "I am not aware," he says, "of any prior case in which the Commission or any court has held that the need by a carrier of money was itself proof of the reasonableness of a specific rate or body of rates increased to meet such need." Further on in his dissenting opinion Mr. Clements says of the stand taken by the majority:

"If the legislative authority of the Commission is as broad and unrestricted as this, then I must confess that I have gravely misunderstood the limitations upon our statutory authority as well as the constitutional power of Congress to delegate its executive power."

The Commission proposes to keep watch on the effect of the 5 per cent increase on revenues, and for that purpose orders the carriers to keep a report for each of the next two years of the additions made to revenues by the new rates.

ANNUAL MEETING AND BANQUET OF RAILWAY BUSINESS ASSOCIATION

The annual banquet of the Railway Business Association, held in New York at the Waldorf-Astoria on the evening of December 10th, was the occasion for one of the most representative gatherings of business men held during the year in that great metropolis. Captains of industry whose fame stretch far beyond our National borders were scattered throughout the vast assemblage, while Government officials and railway executives represented those conflicting factors in railway development which it is the hope of this energetic and enterprising organization to harmonize in such a manner as to leave unimpeded the full development of our transportation agencies.

While the banquet was fully as brilliant as its predecessors, there was an undercurrent of serious purpose, perhaps even more noticeable than at previous annual dinners. The railway supply business had passed through one of the leanest years in its history and while optimism ruled supreme, as appears always the case with this great fighting organization, there was, nevertheless, an evident determination to get at the root of the difficulty and to so definitely develop its cause as to leave no doubt in the minds of the general public as to where the responsibility rested, and what remedies must be applied.

In the discussion of these great questions of transportation, the Railway Business Association was unusually fortunate in being able to procure for speakers two leaders of men, one representing transportation, the other government; both recently chosen for great tasks, namely, Mr. Fairfax Harrison, president of the Southern Railway, and the Honorable Warren G. Harding, United States Senator-elect from Ohio.

Never have members of the Railway Business Association listened to more remarkable speeches from the standpoint of both brilliancy and logic and never have they shown a greater enthusiasm for, or a more harmonious endorsement of, the many strong points developed by both speakers. Perhaps what was most remarkable about these addresses was the fact that although one was delivered by a railway executive and the other by a newly-elected representative of the people, they practically agreed in all essential points and with them apparently agreed every man represented in the vast audience, which, in itself stood for millions of invested capital and the prosperity of millions upon millions of workers in every branch of commercial life. It was an occasion and demonstration long to be remembered, and one of the deepest significance, and it constituted one of the sharpest and most impressive demands yet made upon public regulators to cease from placing unfair restrictions upon railway operations and developments and to more promptly grant that relief so necessary to maintain the credit of these vast arteries of commerce and permit them to maintain and develop their plant.

Both speakers deplored the delay which has been so evident in all attempts to procure relief and both speakers clearly proved

George A. Post,
President, Railway Business Association.

Fairfax Harrison,

"Like the previous stage of irresponsible private control, the existing system of irresponsible, rigid and divided regulation cannot permanently endure."

the great danger which rested in a political form of railway regulation. The statement of President Harrison that the pendulum had swung fully as far on the side of restrictive regulation as it ever had on the side of unregulated railway abuse, brought forth a thunder of applause as did the statement of Mr. Harding to the effect that he believed it to be the opinion of ninety-nine of every hundred thinking people that the railways of the country were entitled to an increase of rates and would gladly see it granted.

George A. Post, who was again, and for the sixth time, elected president of the Association, presided at the banquet, and it is hardly necessary to add to the complete satisfaction of all present. His introduction of the speakers left nothing to be desired, and showed a thorough appreciation of the moral and mental qualities of the men referred to.

Mr. Harrison, who spoke first, was compelled to wait several minutes before he could be heard, so great was the enthusiasm evoked by his presence. An abstract of his address follows:

In the controversy between the owners of railroads and the representatives of the public, the pendulum has now swung to an extreme on the side of irresponsible public power as it had previously swung to an extreme on the side of irresponsible ownership.

The conception is that in the imposition of burdens, railroad companies are public concerns and subject to the public regulating power, but, in the matter of relief, are private property and not entitled to be considered from the standpoint of their public service.

The growth of commerce has injected the question of the regulation of commerce into the States' rights controversy as a factor of prime importance. An undue proportion of the time of the manager and his assistants is diverted from the duties of management to the calls for explanations and arguments before many different State authorities when all that is necessary might be accomplished before one central regulating body, An efficient management is a large factor in securing for, or continuing to, the public a low basis of transportation charges under existing conditions.

One of the most dangerous weaknesses in the system is its inability to give prompt decisions. If there is a legitimate and pressing need for more revenue, the power to authorize or to produce it must be capable of being brought into action at once. If economies must be introduced, the power of management must be capable of responding promptly to the need. If a change of policy is demanded in the public interest, the power to pass upon the question must be capable of convenient and prompt exercise.

First among the essentials is railroad credit. Even a conquering army feeds its prisoners. We need a system which will bring stability of service and credit as well as equality and fairness of treatment. It must be possessed of an authority coextensive with the subject to be regulated. Its powers must not be divided and scattered among a number of independent regulating bodies, many of them responsible to a part only of the public whose welfare is involved, all of varying outlook and influence in their conclusions by differing policies and often by clashing and conflicting interests.

Like the previous stage of irresponsible private control, the existing system of irresponsible, rigid and divided regulation cannot permanently endure. My present purpose is not to venture to suggest the solution but the source from which an acceptable solution must come. A solution is not likely to be accepted if the suggestion comes from the railroad manager, because he is still supposed to look at only one side of the question and to be controlled by a selfish interest. It cannot come from the mere politician, because of his temptation to keep the question unsolved as a means of easy political agitation and as a valuable asset for temporary political advantage.

The problem is a statesman's opportunity. He who solves it must be trusted by all the people. He must be above the suspicion of selfish motive. All the lessons of history must be at his command. He must be a profound student of human action and of human government. He must have power to impress his views upon his fellowmen. He must be able, with just an equal hand, to divide unto Capital and unto Labor its living.

He must be able to assure the public of the correction of abuses, the establishment of justice and the maintenance of facilities adequate for their needs, and he must be able to assure the private owner of protection of his just interests and of fairness to his just rights. He must be able to reconcile the people to his philosophy of regulation and the politician to the loss of a highly valued political asset. Is there a man among us who is capable of this?

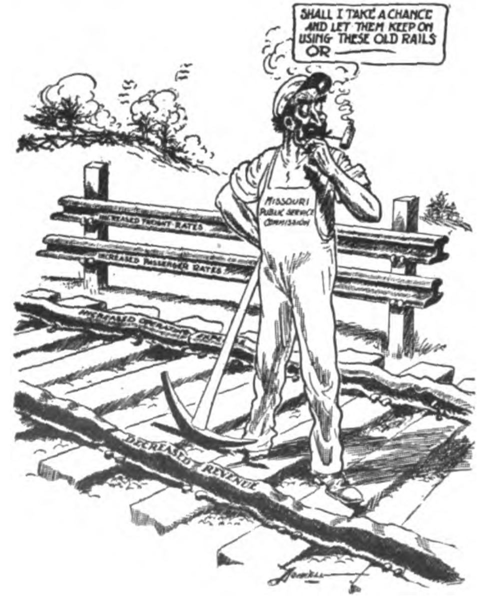
I venture to suggest that the present President of the United States is equal to this great achievement. The time seems ripe for him to undertake it. He has recently in an impressive way shown publicly a sympathetic appreciation of the railroad situation. The fact thus made evident, that he has grasped the point of view from which a solution of this problem must be approached, has aroused in the minds of many the hope that before laying down the reins of government he will propose and work out some constructive plan that will give stability to railroad investment and growth.

The people of the United States have called him to the leadership of this nation. They have entrusted him with their power. He has responded by noble public service. Is it too much to ask that he undertake this problem also and bring to its solution the wisdom and the power which he has already used so effectively in the public interest?

No ambition could be more worthy than to establish a "Constitution of Peace" among the variant views and interests which menace the success of the system of transportation. No service to his fellowmen could be a loftier or a finer service than to place this high interest of the people upon a sound, a stable and a permanent foundation.

I think I properly interpret the men now charged with the responsibility of railroad management when I say that they will welcome a solution of the problem, however it may differ from any preconceived views, and will meet any suggestion that may be made in a co-operative and a helpful, and not in a carping or obstructive, spirit. They are as anxious as the most public-spirited statesman for a just and final settlement of transportation controversies. When it comes to the consideration of any proposal, they may be relied on to put aside prejudice and pride of opinion, for they, of all others, are best aware of the imperative need of the railroads for an adjustment of all differences and for public approval, sympathy and support. Opposition must come from outside the railroad ranks.

The Problem of Safety First.


SHALL I TAKE A CHANCE AND LET THEM KEEP ON USING THESE OLD RAILS OR ——
MISSOURI PUBLIC SERVICE COMMISSION
INCREASED FREIGHT RATES
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SENATOR ELECT WARREN G. HARDING OF OHIO,

Who believes it is the opinion of ninety-nine out of every hundred thinking people that the railways are entitled to an increase in rates.

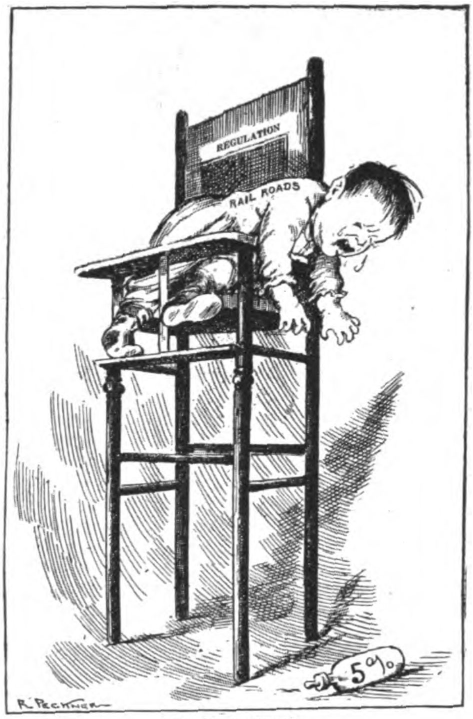
The greeting given Mr. Harding was fully as enthusiastic as that rendered President Harrison and one or two happy allusions at the beginning of his address, gave him at once the complete sympathy of his audience. He spoke in part, as follows:

The argument has never appealed to me that we ought to prosper our railroads for the specific purpose of promoting general prosperity. It seems to me more important to prosper our transportation lines as a simple matter of fairness and justice to this most important single agency in our modern lives.

I believe that the day of plundering financing has passed. I should like to proclaim, in the same breath, the passing of railroad-baiting less inspired by public good than by personal profits and political gain. It has been a great stunt to hammer the railroads.

The drift is toward the sober, second thought. There has been an excess of commissioning. The best railway knowledge in all the land ought to light the way. Public service ought to be the impelling purpose, unheeding public clamor.

I believe it is the opinion of ninety-nine of every hundred thinking people that the railways of the country are entitled to an increase of rates, and would gladly see it granted. Joseph proclaimed the warning to lay by an abundant store during the seven fat years in order to be prepared against the seven lean years. Egypt prospered wonderfully thereby. The wisdom of Joseph holds good to this day. American railways ought to be able to earn enough in the fat years to be



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—**From the *Financial America*.**

prepared to carry on their vast improvements in the lean years which inevitably come.

Under our present system of reduced and insufficient earning, and with increased cost of operation, there are no marked railway betterments except in the high tide of earnings, when cost is highest and improvements are hampered by traffic operations. We ought to reverse this order and provide an ample earning in good times to enable extensive betterment to be made in the dull period. This would tend to better service in the days of the revival. Meanwhile the expenditure for betterments would relieve the general dullness amid such conditions as we complain of to-day.

Through agitation and restriction, there has come impaired credit, until there is a threatened collapse of the railroad edifice. These items of maintenance and betterments have been overlooked by the political exhorters.

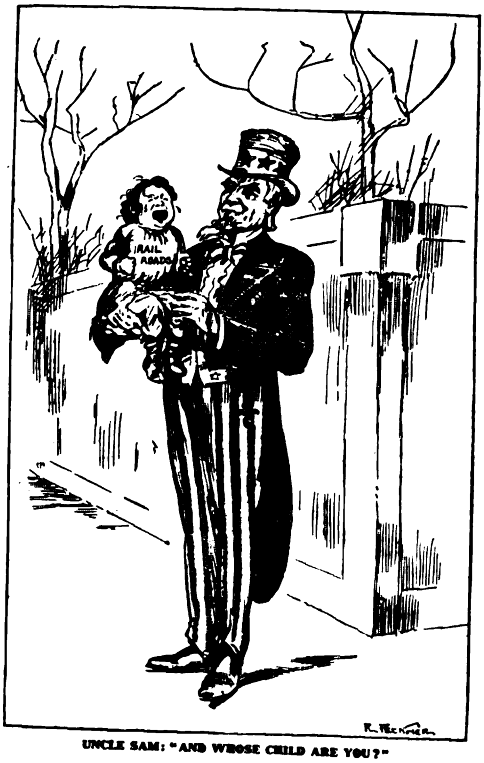
Perhaps the lack of successful regulation is due to the newness of the undertaking, to the unavoidable political agitation and to the harassment of conflicting authority because of varied State legislation and State commissions. We ought to put the entire railway service under interstate control. Such a policy would save millions in public expense and put us on a broad plane. The law making industry is too often worked overtime. The country needs to-day less legislative bills pending and more railroad bills of lading.

It is apparent that the Interstate Commerce Commission believes in the pressing necessity for increased earnings, but opposes the short and direct route. The rate increase would be direct and immediate. Other remedial efforts could be left to follow the slower process of evolved adoption. If the combined income from increased rates and added service charges made excessive earnings, contrary to public policy, the same authority which grants the increase could order a reduction.

Our American wage scale is twice to thrice that of Europe. Our rates of interest are generally higher. Our distances are greater and our population less dense. It would be natural for our railway transportation to be higher. Our freight rates are notably less, and our passenger rates only a trifle higher, and the service vastly superior. Yet on this very branch of business which costs the more in this country, the Commission recommends the increase which it is powerless to grant.

A general rate advance will not bring the complete revival of American activity, but it will save the crash of the temple of transportation, establish railway rehabilitation which is of prime importance in ministering to greater American activities. Governmental assistance in the hour of need will be new assurance that it is not the function or the purpose of government to destroy, but to foster and protect.

There are two things to commend to the public, to railway managers and to members of the Railway Business Association. One is simple honesty, the other is greater intimacy—the fullness of understanding between the railway management and the public served. There has been too much aloofness, sometimes a contempt for public regard. The minds which lead in making dependable public opinion mean to be fair, and need only to be informed. Railways have suffered needlessly because of the lack of public understanding. The public has an ear for the managers as well as the railway baiters, and the growth of favorable public opinion to-day is traceable to the fact that the railways have given their cause to public consideration. To mutual confidence add the unalterable honesty that makes for sincerity in politics, and we shall see a new era, which shall make a greater and swifter stride to our American astonishment of all the world.



UNCLE SAM: "AND WHOSE CHILD ARE YOU?"

While the banquet was the most spectacular part of the day's proceedings, the annual meeting held earlier in the day was, in many respects, no less important, as it is at such meetings that the campaigns of the Association are planned and the progress noted. President Post opened the meetings and briefly reviewed the Association's activities during the past six years. He pointed out the three-fold advantage which had accrued from their efforts, namely, the development of a closer friendship between railway supply men in general, the better acquaintance and readier sympathy between the railway official and the railway supply man and the instruction of the public along lines which will enable them to give a fairer and less prejudiced consideration of the problems which confront present-day railway management. Mr. Post was again unanimously elected president, and with him as vice-presidents were elected S. P. Bush, of Columbus; Alba B. Johnson, of Philadelphia; H. G. Prout, of New York; W. G. Pearce, of New York; Walter H. Cottingham, of Cleveland; W. B. Leach, of Boston, and E. B. Lee, of Chicago. S. M. Clayton, of New York, was elected treasurer. An abstract of the annual report follows:

We come to the end of 1914 confident that the developments of the year presage a broader and a more sympathetic public view of railway regulation. We believe this in face of perplexities discouragements and adversity. The fundamental ground for our optimism is the apprehension expressed from almost every quarter lest our country's business may suffer harm through inability of the railroads to perform their functions adequately by reason of inadequate revenues. A climax in the transformation of popular attitude has been reached. Foremost among numerous evidences of the fact is the veto by a large majority on referendum of an extra crew bill which the State Legislature of Missouri had passed and the Governor had signed. To-day the outstanding phase in the general thought is apprehension lest injury be done to the railroads, and hence to those whom they serve as well as to their owners, tens of thousands of whom are dependent upon them for dividends and to their employes, aggregating more than 1,700,000, who cannot escape serious damage in the long run if the growth of the industry is artificially retarded.

Effectuation of the popular mandate in the form of governmental action will take time. The process is complex. Adapting institutions to new conditions is a slow evolution in a country where the people rule.

It was necessary first to develop agencies for analysis and statement of the facts in form for busy men. Individuals who early appreciated the situation had to find ways for explaining it to their neighbors. This process has been successfully carried through.

Freight rates, though only one side of the problem, have been the occasion for proof of public feeling. The advance sought in 1910 was opposed by the shippers solidly organized, as well as generally by the press. Subsequently the general situation was discussed in communities by their leading citizens. When advances were again sought in 1913 the press had become almost unanimous in favor of permitting adequate revenue, and not a single business organization located in the territory was entered in opposition to the general advance as a whole.

Public officials have, as the next step, to be made acquainted with public sentiment and enlisted in the quest for remedies. Many political leaders, including the President of the United States, now frankly acknowledge the urgency of comprehensive action. Multitudinous questions press for the attention of every public man. To command the aid of political leaders in every part of the country will require that constituents persistently keep the railway problem to the front.

Certain obligations rest on particular responsible agencies:

The law-making body, which is temporary and chosen for miscellaneous purposes, should avoid dealing with details by statute and give a general rule of guidance to a commission, which is permanent and selected for a specific purpose. This applies to rates, service, labor conditions and safety provisions.

Extra crew laws should be repealed. Some method should be developed to prevent strikes under threat of which, regardless of financial ability of the companies to comply, higher wages and costlier conditions are invariably awarded; for labor cost can attain levels which will not only injure the public, but defeat the purpose of labor by retarding the growth of the industry and hence of employment in it. Labor can help itself and the public, too, by cordial co-operation in efforts for economy. Proposals to compel expenditures for any purpose should be rejected unless absolutely necessary. State governments should not seek immunity from economies by piling taxes upon railways as if that source of public revenue were inexhaustible.

Beyond and above these particular phases, the situation imperatively demands co-ordination of regulatory agencies, so that each may be guided by knowledge of what the others are doing. Conflict between Federal and State authorities is in process of mitigation through Supreme Court decisions, but State commissions have this year forbidden railroads to put into effect tariffs prescribed by the Interstate Commerce Commission, and there is no provision for conference or co-operation between these divergent masters whom the roads must serve. Neither the Federal Government nor any State imposes upon any one authority or fusion of authorities power or duty to consider the relation between compulsory expenses and regulated rates.

To sustain railway credit by permitting general rate advances has never been a function performed directly by Congress, and we hope that body will always leave such matters to permanent commissions. Sanction for an increase to meet the deficiency of income which the Interstate Commerce Commission has found to exist would strengthen earnings and credit would then take care of itself. The Commission has explicitly considered as an element in reasonableness of rate fabrics the ability of the average road in in each regional group to command new capital and enlarge its facilities with the growth of the country. Rate advances have been denied in some cases on the ground that credit was not in danger and granted in other cases on the ground that it was in danger.

But not even possession of power to permit rate increases or prompt and liberal exercise of the power is enough. Cost of operation is continually rising through acts of Congress and of the State and of the wage abitrators. Rates cannot be advanced indefinitely to meet such expenses. The rate level would eventually reach a point where the traffic would not move, and the higher rates would produce less revenue instead of more, while stunting the growth of industries and of regions. Somewhere in our system provision must be made to show every year the estimated revenue and the estimated expenditures, and bring about by definite co-operation or reconcilement of these accounts, with provision of surplus for the average road.

Accomplishment of this result is the task of statesmanship. That task was second to none before the European war and the effects of that conflict upon American business have made the railroad question still more pressing. It is for those engaged in transportation and in business to co-operate with political leaders in a spirit of confidence, of candor and of reciprocal open-mindedness. The people of the country are determined that the issue shall be dealt with. It is the obligation of the public in general to emphasize at every opportunity the earnestness of that resolve.

The following resolutions were unanimously adopted before the closing of the annual meeting:

I. We again urge co-ordination of the various agencies of railway regulation. One of the most serious embarrassments under which the Interstate Commerce Commission labors is that it cannot enforce its findings when they conflict with State action. Until some permanent and satisfactory solution is reached, the Federal Commission should initiate and State commissions should join in conferences, exhausting all reasonable efforts toward co-operation. The country should consider its transportation problem not piecemeal but as a whole, with a broad outlook on the general prosperity. The financial condition of the railroads ought to be made plain to every public officer and no burden placed upon the railways without due consideration of the effect upon their net income.

II. We regard general rate advance cases as a proper subject of propaganda. As a matter of public policy the people have a vital interest in strengthening railway credit. They have the right to express their opinion and to promote public discussion.

III. We vigorously dissent from the view that the supreme concern of railway regulation is to avoid the risk of too much railway revenue. In business and in the affairs of government, what men dread is not a surplus, but a deficit. The railroads should be put beyond reasonable doubt of having enough income. It is now known on the highest authority that their income is too low in the public interest. Various substitutes are proposed in place of advances in freight rates as a remedy. It has been demonstrated that some of these suggestions are not immediately practicable. Certain relief should be granted forthwith. National prosperity depends upon it. The people cannot afford mistakes on the wrong side of the ledger. Any superfluous surplus can be dealt with when and if it materializes.

IV. Underpayment of railways for carrying mail demands correction. Quadrennial weighings result in substantial increases in service performed without added compensation. The initiation of the parcel post service without adequate remuneration to the railroads aggravates this discrepancy. This inequity should be minimized through a change to annual weighings. Instead of this, the House has passed and the Senate is considering a method of payment based on advance estimates of car space to be used. We oppose this experiment. It prescribes no method for measuring space actually used, no check-up of estimates by actual measurement, no way of proving whether the space authorized approximates that furnished. The computation of mail pay should be on a basis of ascertained facts so far as practicable, and all findings of the Post Office Department should be subject to review by some less interested arm of the Government.

V. Federal regulation of railway security issues would be an advantage if it did away with regulation by States. Super-added to State supervision, it would further confuse and harass the roads in their financing, already made complex, cumbersome and slow by multiplicity of masters. Inasmuch as authorities differ as to what can ultimately be done, we advocate that Federal action be confined to publicity, as recommended by the Hadley Commission.

VI. President Wilson by his sympathetic reception of railway executives and his generous response to their plea for public co-operation has shown that the time has come when political leaders are willing to listen without prejudice to appeals on behalf of the carriers. Members of our Association can do effective work in arranging conferences with governors, State legislators and members of Congress. The more open and public such meetings are the better.

VII. We congratulate the people of Missouri on the veto of the extra crew bill. In most States railroad commissions have ample power to require safety precautions according to actual circumstances, which vary from time to time and from road to road. Details should be left to regulation. Needless men promote danger rather than safety, and their compulsory employment is a waste of money collected from the rate payers. In those States which have extra crew laws our Association will advocate repeal.

VIII. America has lagged too long behind Europe in protecting against himself the person who risks life and limb by trespassing on the railroad right of way. Our laws are loose, our enforcement lax, the result a yearly toll of awful magnitude. We favor absolute prohibition of trespassing on railroad property under heavy penalties, and rigid severity in dealing with offenders.

THE OUTLOOK AS VIEWED BY PROMINENT OFFICIALS

A number of railway officials have recently expressed themselves in the public press with reference to the railway outlook. While in most of these expressions there is an apparent desire to make the best of things, the outlook is far from satisfactory. President William Sproule, of the Southern Pacific Company, states that:

> The condition of the railroads generally is a serious problem to be faced and the opening of the Panama Canal and the diversion to the canal of business the railroads have hitherto enjoyed adds to its perplexity. The problem of railroad earnings is rapidly becoming a public one, for unless the railroads can make liberal earnings to maintain their credit, so they may get new money to make improvements and extensions, responsive to the business of the public, it is the public who will suffer. The public will suffer because there will be no field of expansion into which the general business of the people can develop, and further, if business should, within its present bounds of distribution, boom again as it did in 1904, 1905 and 1906, there will be such a congestion of railroad facilities in the country as will stop the boom by congesting the business of the public and preventing that kind of material improvement and development which every man of business, large or small, is looking forward to for his salvation. For example, the railroads are not ordering equipment in any considerable quantity because they cannot pay for it. In every way they have had to shrink their expenditures. What this nation needs more than anything else is a soundly informed and constructive public opinion, instead of the destructive criticism which destroys confidence and helps to make hard times. Bad methods of a few should not bring censure on all.
>
> With public opinion directing itself toward helpful methods of building up the general business we will have constructive statesmanship which is the crying need of the time regardless of party or party names.

President Rea, of the Pennsylvania Railroad, with a party of directors and officers recently returned from an inspection of the system and made the following statement with reference to the present situation and what, in his opinion, is the principal remedy needed in order to bring back a more general condition of prosperity:

> Business is depressed and railroad earnings continue to fall materially as compared with last year. As a result, many men are out of work, train mileage and shop operations are curtailed and purchases of materials and supplies are reduced to a minimum.
>
> This enforced economy on nearly all railroads means very many millions lost to manufacturing and business establishments.
>
> There is an eagerness among all classes for some action by the Interstate Commerce Commission, and the hope is generally expressed that the Commission will help the railroads.
>
> The belief is widespread that such constructive action by the Commission would restore confidence and that it would turn the tide of business uncertainty now that the Government has established the reserve banks and measurably provided for carrying this year's cotton crop.
>
> It is felt that the Government is doing a great deal to stimulate business, but that the condition of the railroads is still the chief drawback to manufacturing and commercial activity, and that this serious obstacle can be removed by promptly allowing freight rate increases.

Julius Kruttschnitt, chairman of the Executive Committee of the Southern Pacific Company, in his annual report for the fiscal year ending June 30, 1914, recently made public, has the following to say, in part, regarding the heavy decreases in railway revenues:

> The large decrease in passenger and express earnings is attributable to deferred travel in anticipation of the California expositions and numerous expositions to be held on the Pacific Coast in 1915; the diminished transportation of labor incident to the postponement of new enterprises; the curtailment of excursion, tourist and commercial travel by enforced economy; increased competition of interurban electric lines and motor vehicles; and reductions in express rates by the Interstate Commerce Commission and the Railroad Commission of California, which became effective in February and March of this year.
>
> Notwithstanding the yield of normal crops in sections served by these lines, there has been a decrease in gross freight revenue of $1,772,084.76 due to a substantial curtailment of shipments of forest products in Louisiana and Texas, resulting from the inability of the railroads to make the usual purchases of cross-ties and from the postponement of other new construction requiring the use of lumber; the previous completion of electric power, water supply, irrigation and pipe line construction in California; and the extremely conservative purchases of merchandise.
>
> Reduced rates compelled by influence of Federal and State commissions which were in effect

JULIUS KRUTTSCHNITT.

> during last year and were not in effect throughout the previous year resulted in a shrinkage of at least $500,000 in the gross revenue of these lines, and it is conservatively estimated that cumulative reductions of this character during a period of four years ending June 30, 1914, decreased the gross revenue of these lines by at least $4,000,000.

In a recent letter to President Wilson Charles Francis Adams, who was formerly president of the Union Pacific and for seven years chairman of the Massachusetts Board of Railroad Commissioners, spoke of the dangerous trend in recent railway developments particularly in New England, and summed up his opinion of the general situation in the following words:

> I am clear in my conviction that an inquiry by any reasonable, intelligent and judicially minded tribunal would develop the fact that the return on traffic received to-day is, as a whole, not sufficient fairly to remunerate the capital already invested—far less, in the case of the Eastern New England System, to pay interest on the hundred million additional capital undisputably required for immediate development.
>
> From this situation, I further admit, there is one possible escape only. The community in its own interest, and in order that it may not find itself put out of business and in physical jeopardy, must submit to pay for the service it requires what the service required is reasonably worth. This, to-day, it is not doing.

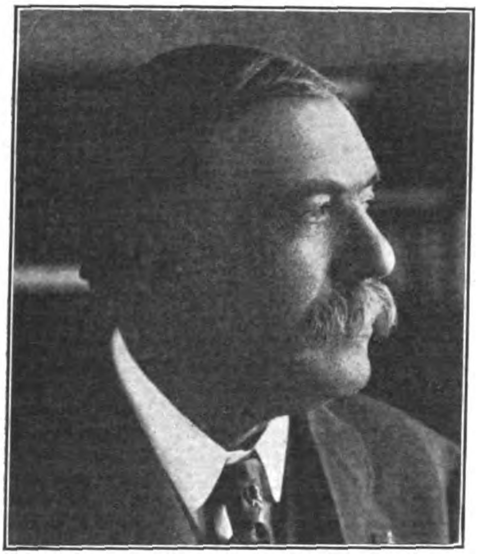
John J. Mitchell, president of the Illinois Trust and Savings Bank, is another prominent financier who has called attention to the necessity of a more liberal attitude towards the carriers. In a recently published statement he said:

> There is every logical reason why the Commission should allow the railroads the right to advance their freight rates and there are no reasons other than political why the carriers should not be allowed the relief in the present emergency. The banks of the country came to the relief of a distressed financial situation, and it is beyond their power to help the railroads if the Government will not make it possible for them to do so.
>
> The largest shipping interests in the country are not opposed to paying more for transportation of their products. They know that the railroads must have more revenue to offset the enormous increase in their operating expense, and they know that if the carriers do not get this it will only be a question of a short time when shippers must suffer the consequences in the form of curtailed transportation facilities.
>
> The Interstate Commerce Commission's advisers are beating tom-toms to attract attention of the public. There is too much politics and too little application of scientific principles in handling these matters, which are widespread and vital in effect.

Ivy L. Lee, executive assistant of the Pennsylvania Railroad, in an address at Indianapolis on December 15th, before the Economic Club of that city, made the following statement:

> There are four fatal defects in our present method of treating railroads:
>
> (1) We act as if every railroad stock was watered, as if every railroad was plundering the people—neither of which we really believe to be true; and we forget that when we invited private capital to build railroads we impliedly promised them fair treatment.
>
> No one could seriously maintain that we could have obtained the money to build our matchless transportation system, if investors could have anticipated the treatment they have received. The remedy is common fairness.
>
> (2) We act as if our railroad system was complete, and as if we did not have to offer any inducements to the world to provide out of its savings the money with which to extend and improve our railroads of the future.
>
> Private capital is timid, and it goes wherever it is treated best. If our country is not to stand still, if the people are to have adequate railroad service in the future, we must take thought for the morrow.
>
> (3) The States hopelessly conflict with each other and with the Federal Government in their demands upon railroads, to the continuous embarrassment of the railroads. This Government of ours was organized to abolish customs barriers between the States. There was no thought of railroads then. But now through State regulation we allow to be erected a barrier to free trade between the States quite as effective as the customs tariffs of Colonial days. The trade of our people is one; the problem of transportation for our people is one, and should be dealt with by the nation for the people as a whole.
>
> (4) Railroads are essentially business institutions. Their problems are business problems. The successful business man must act quickly, he must adjust his affairs promptly to changing conditions. We have developed a system of regulation, however, which clogs in its slow movement, instead of facilitates, the movement of the machinery of trade.
>
> The decisions of regulating boards come too slowly. If regulation is to be a success, some plan must be devised whereby decisions one way or the other shall be rendered promptly. The doctor must act speedily if he is to save the patient; autopsies are interesting and valuable, but they are too late.
>
> The people should regulate the railroads, but regulation should not mean repression—it should mean help and construction.
>
> It should not mean strangulation, but a guarantee of health and strength.
>
> It should mean co-operation between the public and the railroads for the mutual advantage of both.
>
> Everybody uses the railroads. The railroads are, as the President says, "the one common interest of our industrial life." The railroad problem is the people's problem.
>
> The wrong solution means stagnation and economic sterility; the right solution means a continuance of our material and industrial welfare.

The effect of governmental regulation upon the railway industry is discussed by



E. P. RIPLEY.

President Ripley, of the Atchison, Topeka and Santa Fe, who states in his annual report to stockholders recently made public, that:

> Your directors feel that heavy responsibilities devolve on them in the present state of governmental activities directed at the railroad industries. It has been found almost impossible to make even an approximate estimate of the cost of "regulation" which has been imposed on us by the State and National governments. Without criticizing the policy of proper supervision, it is fair to say that many of the laws are not only expensive, but, in the opinion of your officers, unnecessary and superfluous. Constant whittling of rates, plus constant legislation which adds to your expenses without adding to revenue, have had their inevitable effect. Your own company has been less crippled by these conditions than some of those less fortunate, but by reference to page 14 (income account) it will be seen on how narrow a margin we have been working. There are some evidences of a disposition on the part of those in authority to realize that great injustice has been done in the guise of regulation and that it is time to call a halt, but the relief which the railroads need cannot come until this disposition shall be transmuted from mere expressions of friendliness into positive remedial measures. General words of sympathy will accomplish nothing if governmental agencies continue in each specific instance to impose additional burdens or to find excuses for not granting specific relief. Hence your directors deem it their duty again to warn stockholders that their interests are more endangered by the various governmental regulations than from any other source.

James J. Hill discusses the railway situation at length in a recent issue of a paper published by the Business Men's League of St. Louis. He calls attention to how credit has been strained by the war developments and how the future will see both cash and credit in the United States as elsewhere, command higher rates and be more difficult to obtain than within reecnt experience. He shows how farming, the largest single industry will suffer least of all under such conditions, and how other interests through governmental association are being placed in a position to weather the storm. He shows that while greatly inferior industries are being helped in every possible way, nothing has been done for the railways yet, as he points out, without the railroad, without its unimpaired service and its constant extension and improvement, neither the farmer, merchant, manufacturer nor consumer can prosper. To quote from the article:

> It should be obvious to everyone that the railroads must be so treated that they can at least earn in part and borrow in part the vast sums which they are going to require. Unless they can earn, and earn more liberally than in the past, they could scarcely borrow even in such a market as that of the first six months of this year. In the financial market created as a consequence of this war, they will not be able to borrow at all, or only on unfavorable terms and to a limited extent. With pressure upon them from all sides for more wages, more taxes, more facilities, more kinds of costly service and more money to pay the salaries of State and National agencies charged with the never-ending task of investigation and inquisition, they cannot even maintain the unsatisfactory rate of earnings of their recent past. This is not the argument of an advocate for a cause; it is the conclusion drawn from official facts.
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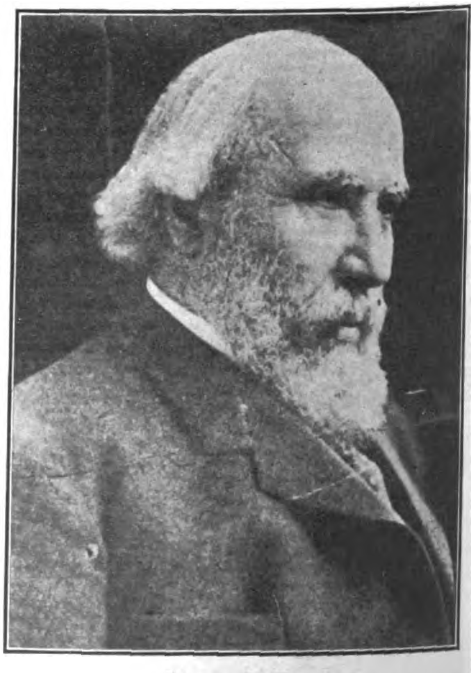
> With the new stimulus which our people reasonably expect after peace is established, the new



JAMES J. HILL.

markets to be satisfied, the new demands filled, all involving additional demands upon the carrier, his machine will break down hopelessly unless it can be made more adequate. That can be done only by securing the investment of enough capital. It could not be done to-day if the supply of capital and the demand for it stood relatively as they did six months ago. To imagine that it can be done when there is such a poverty of available capital as there will be for ten, twenty, possibly more years to come, is absurd.

What are likely to be the effects at home of conditions which surely approach, if no preventive is provided? There are probably $15,000,000,000 to $16,000,000,000 of American railroad securities held at home, and from $3,000,000,000 to $5,000,000,000 held abroad. What must happen to these securities if nothing is done?

To look only at the probable action of the foreign holder, so soon as the exchanges are opened once more, what is he likely to do with property averaging him a return of 4 or 5 per cent, in another country, when the reconstruction of industry at home is calling for all available capital at a much higher interest rate? What is likely to be the effect upon the railroads, upon the credit of the country, upon the gold supply and the whole financial system, if the holders of these securities are virtually compelled, as sound business men looking for the highest average rate of profit, to dump any such quantity of their holdings upon the markets of the United States? What must be the effect upon business, credit and banking of so profound a disturbance in the basis of such an enormous financial and industrial interest?

I have stated in outline the main facts of the after-the-war situation as it relates to the railroads. Through them it relates to every business and to every family and every man in the country.

The railroads require a loosening of the bonds which even in ordinary times clasp them so tightly that they cannot give to the public the best service of which they are capable. It needs no reversal of general policies, no unsettling of the relation between the railroads and the Government, but an agreement upon just two things: First, a general permission to all the railroads to advance rates, if they find it necessary, to not to exceed a certain per cent of the rates at present in force; second, the assurance by common consent of the leaders of public opinion and political action that there will be no more legislation restricting railroad activities, lessening receipts or increasing their expenditures.

The magnitude and the urgency of this matter have not yet impressed themselves duly upon the people of this country. They have been too stunned by the awful and unexpected spectacle abroad, too absorbed in the progress of the most terrible event in history, too involved in study of the immediate consequences which had to be faced almost in the day that they were born, to realize the railroad situation in the new light thrown upon it by the lurid flames of conflict. But it cannot be relegated to a later time or an inferior place.

The railroad is the sap of the industrial tree. It is the speed regulator of industry. It is the thermometer of credit. Its stability, its prosperity, its ability to confront with confidence a totally new era in the capitalistic and credit conditions of the world, must be protected and assured. No duty devolving upon those who sit in the watchtower of the world while nations sway and fall below them, studying how to guard ourselves against the calamities that their ambition and hate and faith in force threaten to send on us as well as on them, can take precedence of this.

A SHAMEFUL RECORD

The record of Congress and the Post Office Department with reference to properly compensating the railways for carrying the mails since the installation of the parcel post, is little less than shameful. At the present time the railways of the country are carrying approximately half the parcel post without payment of any kind, and in addition are underpaid for the carriage of the balance of the mail matter.

Efforts have been made, but apparently with little avail, to procure a fair consideration of this question and an exhaustive investigation by a Congressional committee specially appointed for this purpose, has shown that the present rate of pay for this service is below what it should be.

In spite of these developments and the favorable opinion of the press of the country, Congress closed its recent session without providing adequate relief, and the railways have as yet received no assurance that relief will be granted during the present session.

In a letter to Mr. Frank E. Noyes, manager of the Parcel Post News with headquarters at Marinette, Wis., the Honorable William H. Taft, had on October 2, 1914, the following to say with regard to this particular feature of the parcel post development:

> There is one thing connected with the parcels post that ought not to meet the approval of anybody, and that is that we have not given to the railroads appropriate compensation for the additional burden that they have to carry by reason of the parcels post, but after a time Congress will see its duty and make reparation in this regard I hope.

Mr. Taft regards the parcel post as a great step forward in the methods of cheap transportation for the people, but like all other fair-minded persons, he desires to see the railroads properly compensated for the additional work which it involves.

In its issue of November 19th, the Philadelphia *Public Ledger* asserts that, "The profits of the parcel post, in fact, come out of the pockets of the railways, which are transporting mail matter of this sort at ruinous rates," and the Pittsburgh *Gazette-Times* of November 11th, affirms that "A square deal is required by the Government in the transactions of citizens or corporations doing business with it, but for years it has been persistently regardless of the obli-

William Howard Taft.

Who believes the railroads have not been as yet, granted appropriate compensation for the additional burden imposed upon them by reason of the parcels post.

gations to be fair with the railroads in the matter of mail transportation."

The following statement just issued by the Committee on Railway Mail Pay and which briefly reviews developments since the installation of the parcel post clearly indicates how grossly unfair the present methods are:

> When the parcel post was established on January 1, 1913, no provision was made to pay for its transportation. As a result, the railroads carried the entire parcel post for the first six months without any payment whatever.
>
> Meanwhile, the mails were weighed on the railroads in the Middle Atlantic States, and on July 1, 1913, the mail pay of those railroads was increased to compensate them for the weight of parcel post then being carried.
>
> Six weeks later, the weight limit per parcel post package was raised by the Postmaster General from 11 to 20 pounds, and on January 1, 1914, to 50 pounds. The postage rates were lowered. For the additional traffic created, the Middle States railroads have not been paid and are carrying for nothing all packages above 11 pounds weight.
>
> Last spring the mails were weighed in the far West and the increased pay found to be due was awarded to the railroads of that section, beginning July 1, 1914. These are the only railroads in the country now being fairly paid for carrying the parcel post.
>
> In densely populated New England and the Middle West, and in all the Southeast, the railroads are still carrying the parcel post without pay, have for certain arbitrary allowances, in no case exceeding a five per cent increase in mail pay and ranging down to a fraction of one per cent, which Congress permitted the Postmaster General to make at his discretion.
>
> Actual weighing of the mails elsewhere showed that proper increases would have been 20 to 25 per cent.
>
> Nearly two years have now elapsed since the establishment of the service, yet approximately half the parcel post is to-day being carried by the railroads without payment. Results shown in the cases where the increased weight of mail has been properly ascertained indicate that in the present year, alone, the railroads, as a whole, will thus lose upward of $8,000,000.
>
> For this injustice the cause lies in the Post Office Department's practice of weighing the mails and readjusting railway mail pay only at four-year intervals, one of the four "mail contract sections" into which the country is divided being covered each year. Every railroad, after receiving an adjustment of pay, is required by this system to carry the increase in the mail tonnage for four years without compensation.
>
> In an appeal for fair play, the railroads, through the Committee on Railway Mail Pay, have joined in asking Congress to require by law that the mails shall be weighed throughout the country at least once a year, and the railroads paid for the annual increase in the weight of mail carried. Simple justice long ago required this reform. The parcel post has made the need doubly urgent.

The Committee on Railway Mail Pay has made a direct appeal to Senator Bankhead, chairman, and the members of the Senate Committee on Post Offices and Post Roads, urging action to assure the railroads fair compensation for carrying the mails. The appeal, in part, is as follows:

> After two years of most careful inquiry, the Joint Committee on Railway Mail Pay, under the chairmanship of former Senator Bourne, established three fundamental facts:
>
> 1. That the railroads as a whole are underpaid for the service of carrying the mails by not less than $3,000,000 per year.
> 2. That in addition, the railroads are required to perform important auxiliary services, distinct from actual transportation, for which no payment whatever is made.
> 3. That these conditions (resulting in general underpayment) are due to certain specific defects in the present system.

The statement points out that the railroads now lose over $9,000,000 per year through the system of weighing the mails only once in four years, and the nonpayment for various terminal and transfer services and for apartment car distributing space.

> How then should this underpayment be rectified?
>
> The railroads suggest that the general condition of underpayment, found by the Bourne Committee, be remedied by providing for the following:
>
> 1. Annual weighing of the mail.
> 2. Payment for, or relieving the railroads from, performing side, terminal and transfer service.
> 3. Payment at just rates for apartment car distributing space.
>
> Correcting the foregoing specific details of underpayment would accomplish these results:
>
> 1. Remedy the present injustice toward the railroads, and at the same time build for the future upon the basis of known experience in the past.
> 2. Provide an automatic plan for paying for the rapidly developing railway mail service.
> 3. Remove opportunity for friction or misunderstanding between the Post Office Department and

the railroads, thereby increasing the efficiency of the Post Office Department and placing at the disposal of the Government the whole-hearted cooperation of the railroads in developing the postal service.

It seems to us that such a plan will violate no one's sense of justice, and will embody the greatest amount of practical statesmanship.

It is almost incomprehensible, in view of the above facts that the Postmaster General should, in his annual report, which was issued the second week in December, congratulate the Department and the country on the fact that for the first time in its history the Post Office Department was self-supporting. As this surplus is largely, if not entirely due to the fact that the railways are receiving practically no compensation for the enormous tonnage carried under the development of the parcel post, the revenue from which is really responsible for the surplus to which the Postmaster General refers, his statement is little short of outrageous and violates utterly the principle of American fair play. Under the circumstances, the least the Postmaster General could have done would have been to call the public's attention to the fact that this surplus was due to temporarily abnormal conditions under which the railways were not being fairly compensated for carrying the mails, and that the Department was making every effort to develop effective measures by which this injustice could be speedily rectified.

On December 15th, Mr. Ralph Peters, president of the Long Island Railroad, and chairman of the Committee on Railway Mail Pay, issued the following statement:

Without giving the railroads the opportunity even to ask for a hearing, the House of Representatives Committee on Post Office and Post Roads has reported the post office appropriation bill, carrying as a rider the provisions of the Moon bill for changing the basis of railway mail pay, and is seeking to secure from the Rules Committee to make the new legislation in order.

Passage of this legislation will have the certain result of compelling the railroads to carry the parcel post at ruinously low rates—in many cases for less than is earned in hauling the lowest grade of freight.

Postmaster General Burleson, in his annual report just submitted to Congress, expresses the desire to see the railroads fairly paid for carrying the parcel post and the general mails. We appreciate his good intentions, but unfortunately the adoption of the Moon bill plan of payment will have an effect exactly the opposite of that of which he speaks.

The railroads will lose this year not less than $8,000,000 in carrying the parcel post, by reason of the compensation received falling at least that much short of covering the service rendered. The mail pay provisions which have been injected into the post office appropriation bill will inevitably increase this underpayment, by reducing the scale of pay for transporting the parcel post and all other classes of mail.

The small roads will be the greatest sufferers. They are already most inadequately paid for carrying the mails and will, according to estimates made by some of their officers, suffer a cut of 25 to 65 per cent additional, if the plan of payment embodied in the post office appropriation bill is passed.

There is neither need nor justification for legislative experiments with railway mail pay, and the Moon bill plan of payment is purely experimental. If Congress wishes to assure the railroads fair pay for carrying the parcel post and the other mails—which we cannot doubt—it is a simple matter to do so.

Let Congress retain the system of paying the railroads for the weight of mail carried, but provide that the mails shall be weighed not less often than once a year, instead of only once in four years, as at present. Mail pay will then keep reasonable pace with the increase in the service rendered, instead of lagging years behind. Justice will be done both to the Government and to the railroads.

THE SAFETY OF UNITED STATES RAILWAYS

For many years, until railway accident figures were subjected to classification and study, it was the general belief that the railways of the United States were exacting a frightful toll of human life on account of lack of proper precaution and safeguards in the operation of trains.

When, however, the railways began to subject their accident figures to a careful analysis, it was found that railway travel instead of being unduly dangerous, was in reality, one of the safest of all methods for getting from place to place, and furthermore, when a fair comparison was made with railway accidents in other countries, the United States' railways were found to be among the safest in the world.

Casualties on American railways have been and continue to be very heavy, and far beyond what a reasonable precaution should make them. When it is considered, however, that the great bulk of railway accidents occur, either in connection with trespassers or from the acts of individual employes who generally personally suffer the results of their own carelessness, it will be appreciated that a very small proportion of the total deaths and injuries can be placed at the doors of responsible railway officials or to the methods and rules under which the railways are operated. As a matter of fact passenger casualties are remarkably small and a large proportion of them are due entirely to the carelessness of the passenger injured or killed.

Since the inauguration of the safety movement, constant improvement has been noted in the safer operation of trains both with regard to freight and passengers, which has led to a most encouraging reduction in the loss of life and in the destruction of property. As the United States railways stand to-day, taken as a whole, they undoubtedly represent the safest and most efficiently operated system of any nation of the world.

That other countries are having their trouble in avoiding accidents which lead to the loss of both life and property, is indicated in an address delivered on December 8th at Montreal before the members of the Canadian Railway Club by Mr. Alfred Price, assistant general manager of the Canadian Pacific Railway. Mr. Price's subject was, "Some Maximums and Minimums in Train Operation." His references to freight losses and personal injuries, however, present a good illustration of the difficulties encountered by the Canadian roads in safely operating their trains. Referring to the results for 1913, Mr. Price states as follows:

> Last year the Freight Loss and Damage Account of the Canadian railways amounted to over $2,000,000, a sum double the amount paid out in 1911. The shipper wants the goods delivered to the consignee intact, and would gladly waive the $2,000,000 he now receives to have this done. This sum therefore, may be regarded as a penalty imposed upon the railway for non-fulfillment of an obligation or contract. The railways are almost entirely responsible for this loss. The waste can be stopped by the adoption of up-to-date methods and insistence upon the exercise of greater care on the part of agents, billers, checkers, porters and trainmen.
>
> For clearing wrecks and satisfying claimants on account of injuries the Canadian railways paid out last year over one and one half million dollars. There were no less than 710 people killed by the movement of trains, besides 2,966 injured. It is quite true that almost half of those killed were trespassers, and we are likely to continue to have a harvest of deaths from this cause every year until there is a law making trespassing a criminal offense, and a severe penalty is imposed for a violation. Most of the other fatalities and injuries might have been avoided by the exercise of ordinary care. What is needed more than anything else is increased safety in railway operation. One dislikes to speak of the loss in dollars and cents in the face of the awful loss of life and limb as a result of these accidents. The figures quoted tell their own pitiful tale in terms needing no emphasis. The Safety First Campaign is doing a grand work, and is entitled to the sympathy and active help of every railroad officer and employe.

THE TRESPASSING EVIL

Much has been said during the past two or three years regarding the trespassing evil and the laxity on the part of Government officials in the enactment of laws or the enforcment of those already on the statute books, in such a manner as to improve existing conditions. The slaughter goes merrily on, however, and those in authority appear to take no steps to stop the annual killing of thousands of useful American citizens, to say nothing of the large number of little children who lose their lives in a similar manner. Even those roads which have made a special effort to eliminate this evil have become almost discouraged over the apparent careless indifference of public officials whose co-operation is necessary before any improvement can be made.

A pamphlet recently published by George Bradshaw, a well known safety first expert, pathetically illustrates the disastrous effect of permitting minors to play in railway yards or upon the right-of-way. This pamphlet contains a story of a small boy, by name Fred Warren, written by himself, who, in attempting to jump upon a moving freight car, lost his balance and had his leg crushed beneath the passing wheels. Of course amputation was necessary, and when the little fellow returned to active life, crutches were necessary and will no doubt

George Bradshaw.

be his constant companion for the balance of his life. His pathetic tale of how his entire life was changed and how all those active outdoor sports in which the heart of the young boy delights, had to be forever abandoned, should in itself, provide the necessary incentive for those in authority to do everything possible to avoid future occurrences of this character.

The teacher of the boy also has a short article in the same pamphlet in which she points out among other things, that during the past three years, there were more railway trespassers killed in the United States and Canada than in the War of 1812, and she pertinently adds that while those in the War of 1812 died fighting for the flags of their countries, the others died doing what they had no right to do and and no good reason for doing.

Mr. Bradshaw closes his pamphlet with a problem, the solution of which is of interest not only to railway officials but to every citizen who objects to the useless taking of human life. It should appeal particularly to public officials who appear to be so indifferent on this subject. The problem as presented by Mr. Bradshaw is as follows:

> Trespassing on railroads has become a national evil. Armies of men, women and children are being killed and maimed, from an unnecessary risk, and not a hand is raised to stay the slaughter. The railroads are practically powerless in the matter. Only an aroused and determined public sentiment can solve the problem.
>
> Parents. Will you not teach your children the danger of walking or playing on railroad tracks or about cars?
>
> Teachers. Won't you talk to the children about the protection of their lives and limbs? Children like stories. Read them this one of Fred Warren or tell them a better one of your own.
>
> Ministers. Is this not a subject worthy of your consideration and comment?
>
> Employers. Will you not, in the interest of humane and economic policies, use all proper means in your power to prevent your employes from trespassing on railroad property? A large percentage of those injured and killed are laboring men going to and from their work.
>
> Legislators, Judges and Citizens. When will you bring about the enactment of laws, where necessary, and the enforcement of existing laws to stop trespassing on railroads?

THE HEAVY INCREASE IN RAILWAY TAXES

T. A. Polleys, tax commissioner of the Chicago, St. Paul, Minneapolis and Omaha Railway, has recently completed an investigation which tends to show that railway taxes per mile, in the five years from 1909 to 1914, almost tripled, in rate of expansion, the growth in the commercial value of the railways taxed. This general statement applies to fifty-three of the largest railway systems of the country, operating practically 190,000 miles of road.

The rapidity with which value is outstripping earning power, due to abnormally expanding costs and taxes, resulting in constantly smaller returns on new capital devoted to improvements and extensions, is another feature strikingly shown. To eliminate temporary or abnormal factors, averages for all the roads covering five years to 1909 are used for the most part in comparison with averages for the five years to 1914.

Between 1909 and 1914 the average commercial value per mile rose from $64,003 to $72,627, or 13 per cent. Between the two five-year periods gross revenues per mile rose in the same ratio of 13 per cent, or from $10,509 to $11,832. So excessive, however, was the rise in expenses that net per mile, from which returns on the 13 per cent greater value must be paid, increased only 7 per cent.

Taxes, on the other hand, showed no like disposition to lag. In contrast to the 13 per cent increase in per mile value they climbed in five years from $401 per mile to $548 per mile, a modest expansion of 37 per cent, practically three times as fast in proportion as the value of the property taxed!

After charging this rapidly expanding burden to net revenues, there is left in the five years to 1914 an average return of only 4.31 per cent on the value of the property, against 4.72 per cent five years before. In other words, while both value of the property and gross business done rose by 13 per cent, in the ratio of return on the investment there was an actual loss of almost 9 per cent.

Whereas in the first five years it took $67.26 of every $100 revenue to operate, it took $68.98 in the second five, while to operate and pay taxes the sum rises from $71.00 out of every $100 to $73.62. The ratio of taxes to gross earnings, despite the gain in the latter, jumped from 3.735 per cent in 1909 to 4.64 per cent in 1914 and taxes per $1,000 commercial value from $6.26 to $7.55, or 21 per cent.

Against the average increase of 13 per cent in commercial value of the railways included, the following figures display the proportionate rise in taxes on some of the properties from 1909 to 1914:

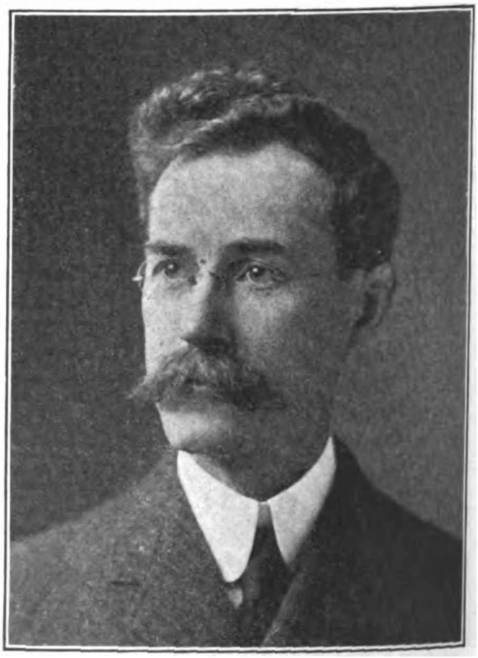
Company.	Per cent Increase in 5 yrs.
Atchison, Topeka and Santa Fe	65
Baltimore and Ohio	39
Chicago and Eastern Illinois	73
Chicago and North-Western	48
Chicago, Burlington and Quincy	56
Chicago, Milwaukee and St. Paul	31
Chicago, Rock Island and Pacific	43
Chicago, St. Paul, Minn'polis and Omaha	51
Cleveland, Cincinnati, Chicago and St. L.	40
Colorado Southern	73
Delaware and Hudson Company	44
Delaware, Lackawanna and Western	70
Erie Railroad	34
Great Northern	63
Illinois Central	40
Kansas City Southern	76
Lake Shore and Michigan Southern	34
Lehigh Valley	44
New York Central	34
Northern Pacific	77
Pennsylvania Railroad	72
Pennsylvania Company	46
Southern Pacific Company	70
Union Pacific	58

These increases in taxes per mile are in each case from 2 to 9 times the proportionate growth in value, while two of the largest increases per mile are despite actual contraction in value per mile which has taken place as a result of the larger divisor of additional mileage.

SETTLEMENT OF PHILADELPHIA SUBURBAN FARE CONTROVERSY

Somewhat over a month ago the railroads entering Philadelphia, in conformity with the general recommendations made by the Interstate Commerce Commission that the passenger service of the railroads should bear a fairer proportion of the cost of operation, made certain increases in their suburban passenger fares which led to considerable opposition and criticism which finally developed in an appeal to the Pennsylvania Public Service Commission. The greatest opposition centered around the withdrawal of the 100-trip ticket by the Pennsylvania Railroad and the 50-trip ticket by the Reading. While the low rate at which these tickets were issued was considered a good reason for their withdrawal, the fact that many commuters abused their privilege and often failed to present their tickets, was another and very strong reason why this form of ticket was decided upon as being impracticable. The present method of punching these tickets makes the success of the conductors' efforts largely dependent upon the honesty of the individual and, strange as it may appear, people who are absolutely honest in every other particular, still consider it a privilege to beat the railways whenever they can. The character of the 100-trip ticket, which was valid for a year from time of purchase, offers a temptation which is entirely lacking in the employment of a ticket, whose time limit is more restricted like that of the monthly ticket.

The Pennsylvania Public Service Commission after considering the pleas of both the commuters and the railroads, decided upon the restoration of the 100-trip ticket at an advanced rate, however, the maximum cost being placed at 1½ cents per mile, while the cost of the 10-trip ticket was placed at two cents per mile. As the Reading had no 100-trip ticket on sale and was about to withdraw the 50-trip ticket, the Commission made its 100-trip ticket ruling applicable to this road as well as to the Pennsylvania. The time limit in both cases was reduced to six months. The Commission also permitted an advance in both the 60-trip monthly ticket and the 46-trip monthly school ticket, but ruled that these tickets in the future, would be valid one month from the date issued instead of only for the calendar month in which issued. In other words, a 60-trip ticket purchased, for example, on January 10th will be valid for one month from that date instead of being good only until the end of January.


Emory R. Johnson of the Pennsylvania Public Service Commission.

The railroads had also withdrawn their round-trip tickets which were a slight reduction over twice the one way fare. This action the Commission refused to interfere with, so that in the future, no roundtrip tickets will be sold between Philadelphia and its outlying suburban districts at reduced rates.

As a whole, the decision was a victory for the railways as it clearly recognized their right to make appreciable increases in their passenger fares. While all the changes considered necessary were not permitted, the railways have gained probably as much as they could have expected under the circumstances, and at the same time popular resentment which was strong under the original changes, has been greatly decreased.

Professor Emory R. Johnson, a member of the Commission, issued the following statement regarding the decision:

> The Commission has given careful consideration to the schedule of fares that may with justice to the public and with fairness to the carriers, be charged different classes of suburban passengers. It seemed to the Commission that the following scale of fares for suburban passengers having different demands for transportation would be reasonable:
>
> First—Sixty, forty-six and 180-trip individual commutation tickets which are sold at about 1 cent per mile on the average.
>
> Second—One hundred-trip individual tickets good for six months from the date of issue, sold at a rate not exceeding 1½ cents per mile.
>
> Third—Ten-trip tickets, good for bearer and those accompanying the bearer, sold at a rate not exceeding 2 cents per mile.
>
> In addition to these three classes of tickets the 1,000-mile tickets now sold at 2¼ cents per mile, will be available for those who travel irregularly as well as the regular one-way and round trip tickets sold at the standard fare of 2½ cents per mile.
>
> The decision of the Commission authorizes a part of the increase in suburban passenger fares sought to be made by the carriers. This is deemed justifiable in view of the showing made by the carriers as regards their present passenger revenue and expenses. The restoration of the 100-trip ticket will be an advantage to a large number of suburban residents who make frequent but not daily trips into the city, and the reduction of the charge for the 10-trip tickets from 2¼ cents to 2 cents per mile will mean a substantial saving to many persons.
>
> The order of the Commission making the school tickets and 60-trip tickets good for one month from the date of issue instead of for a calendar month, and the 180-trip tickets good for three months from date of issue instead of for three calendar months, will also reduce the passenger expenses of many users of monthly and quarterly tickets.

On the same day the decision was made public, the Pennsylvania Railroad issued the following official statement:

> The Pennsylvania Railroad will comply with the recommendations of the Pennsylvania Public Service Commission concerning passenger rates. Immediately upon the decision being rendered, arrangements were made to file the proper tariffs embodying the new rates, both State and interstate, and these new tariffs will, with the permission of the Interstate Commerce Commission, become effective on December 15, the same date on which the rates as originally filed were to have gone into effect.
>
> The increases as originally provided were in compliance with the general recommendations of the Interstate Commerce Commission that in view of the unremunerative character of the passenger traffic, the railroads take measures to increase their passenger revenues.
>
> The Pennsylvania State Commission now also finds that additional passenger earnings are justified. It is to be hoped that actual experience with the new rates now recommended by the Commission will produce such a satisfactory effect upon revenues that further general readjustments of passenger rates will be unnecessary in the near future.

THE LABOR SITUATION

Little has developed recently in the railway labor situation, outside of the demands of the Western locomotive engineers and firemen, to embarrass the operation of the railways. The fact of the great shrinkage in railway earnings, coupled with the necessity of laying off thousands of railway employes, has kept the railway labor unions in a frame of mind not conducive of fresh demands upon the carriers.

The danger, however, like the sword of Damocles, still hangs over the head of railway operating officials, and it doubtless only needs the return of more prosperous conditions, to witness railway labor again engaged in a mighty effort to squeeze the last dollar out of what heretofore has appeared to be an inexhaustible till.

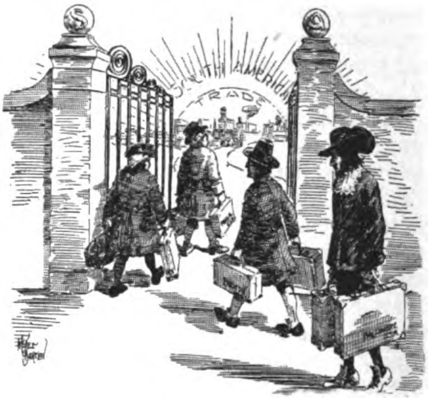
Under different conditions there would have been a great reduction in the wages paid to railway labor during the past six months. Employes in other industries, and in fact railway officials and the clerical service, have suffered salary reductions. The wages of railway labor, however, which have been fixed through boards of arbitration or mediation, have held firm, and other branches of the service have had to foot the bill. These conditions have been partially met by a greater reduction in the working force than would otherwise have been necessary, and, in this way, labor has really been the loser, as it always will be when temporarily successful in forcing unsound economic conditions upon the general railway situation.

Government ownership has so often been held up as a panacea for all railway ills, that it is interesting to note how conditions of a similar character are met in countries where the railways are owned by the Government.

Recent reports from Switzerland, where the State railroads of that country are run on a miniature scale by conditions similar to those affecting American roads, state that the wages of employes have recently been reduced and an increase in rates is under consideration in a supreme effort to make both ends meet. To quote from a recent report issued at Chicago by the Bureau of Railway News and Statistics:

> While American roads are facing demands for immense increases in wages, however, the Swiss Federal railways have made a reduction, through abrogation by the Government of advances in wages and salaries recently awarded and a reduction in appropriations to pensions and benevolent funds, a saving in all of over $1,150,000.
>
> Yet with the war's effects added to the long continued rise in operating costs, it has been found in Switzerland as in the United States that contraction in expenditures will not suffice to maintain equilibrium between income and outgo within a visible period. The only recourse, according to the Swiss advices is "a thoroughgoing advance in rates."
>
> Freight rates are already so high, averaging in 1911 for all Swiss roads 2.92 cents per ton mile, almost four times the average in the United States, that it is considered impossible to advance them further. It is feared also that an advance would result in diverting from Switzerland what international through traffic now passes over its lines, with further loss to them and profit to neighboring foreign roads.
>
> The advance, therefore, must fall on passenger traffic, especially on the cheap return tickets, which it is suggested to increase from 15 to 20 per cent, which, with a corresponding advance in "circle tickets" and a smaller increase in baggage rates, would afford about $1,000,000.

Gates Ajar!

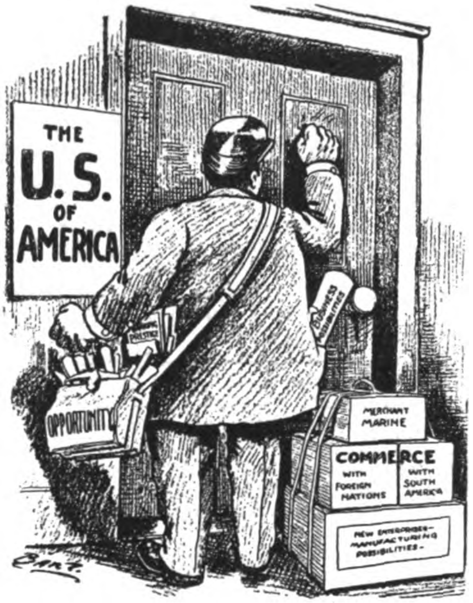


—From the *Baltimore Sun.*

EFFECT OF THE EUROPEAN WAR UPON IMMIGRATION

Considerable has been written in the RAILWAY WORLD within recent months concerning the probable after-effect of the European war upon immigration and it has been freely predicted that the greatest flow of immigration, in the history of the United States, would commence with the close of this great conflict. These predictions appear to be fully justified by a recent interview which our Canadian representative had with Colonel A. D. Davidson, land commissioner of the Canadian Northern Railway, who is not only one of the most noted pioneers of Canadian development but has recently returned from Great Britain where he has been making observations regarding the probable migratory movements which will result from this war. Colonel Davidson said:

> After the Franco-Prussian War in 1871 there began a heavy procession of families and ex-soldiers from Germany to the United States. Militarism, then as now, sent scores of thousands in search of a land where worthier ideals held sway and the Middle States benefited very materially. Canada at that time was not, of course, in the eyes of the world as she is now. The French held to their own land with that steadfast affection which has refused to recognize the lure of new homes in a new country. But the French peasant to-day must face a different problem. The devastation in the rich valleys where the troops are now fighting is near to absolute. Farm buildings, villages, are razed to the earth. Churches and schoolhouses are smoking ruins. Forests have been cleared away, roads blown up, almost every material thing tbout which associations cling exist no longer within the region of hostilities. When the war closes, thousands of French farmers must face the question of starting life anew. Undoubtedly the French Government will encourage them to return to their old homes, but against that will be the prospect of free farms in Canada, a land under the Allies' flag.
>
> I am convinced, too, that we shall add to the population of Canada many thousands of Belgians. Commercially, that heroic country is a wreck. Rehabilitation under the best imaginable circumstances must be slow and difficult. Is it, therefore, too much to say that large numbers of Belgian farmers finding their life's work blotted out by German invasion will look favorably upon the broad and peaceful fields of the Canadian West? I feel certain that this result will come about in the days following the war, and we could not open our doors to worthier fellow-citizens. As for the English and Scotch who have been coming to us in such splendid numbers I anticipate a resumption of British emigration to an ex-



KNOCKING AT OUR DOOR.
—*Minneapolis Journal.*

tent quite equal to what we have already seen. The reasons, I think, are obvious. Thousands of young farmers at the end of the war, possibly one or two years from the time they volunteered, will return to England to find their jobs filled by others or their connection with old employers disturbed in accidental ways. The point is, they will have been uprooted, as it were, sufficiently to enable them to make a clean start in a new country without a great sentimental sacrifice. Suppose that the Canadian people step into the limelight at such a time with an invitation to settle on free homesteads! Is it too optimistic to think that the invitation will be greedily accepted and that numbers of British army men will throw in their lot with us. Every likelihood points to that coming about.

The opportunity which Colonel Davidson points out for Canada is as fully available for the United States. A return to prosperity, within a reasonably short time, would mean an instant and increasing demand for labor on the farms, in the mines and in the factories throughout practically all sections of the country, but particularly in the great Western regions where the wonderful resources of this great Nation have only been slightly developed. No doubt the railroad officials of the United States are as fully cognizant of this opportunity as are their Canadian neighbors, and when the proper time comes we may look for an increase in immigration figures which will set a new record for such movements.

Contemporary Opinion

The Business Man and the Rate Advance.

DISCUSSING the railroads' application for increased rates now before the Interstate Commerce Commission, the Dry Goods Economist, in part, says:

No unbiased merchant could have read the testimony presented at the belated hearing accorded the railroads by the Interstate Commerce Commission on Monday of this week without being impressed with the seriousness of the situation which the roads are now facing. We are well aware that hostility to the roads has not been permitted to die down. We know, too, that many merchants do not realize the extent to which they themselves would benefit through the impetus to business in general, which would inevitably result from putting the railroads on a sound financial basis. It is high time, however, to take a broader view of the situation.

Lack of proper appreciation of the sweeping change in conditions is now dangerous. It may have fatal consequences. If the policy of starving the railroads, in order to punish them for past misdeeds, or to pound all for the shortcomings of the few, ever was in order, unquestionably it is out of order now. As the "Economist" has suggested, to continue such tactics now is playing with fire. Granting that an advance in freight rates would temporarily place a burden on the merchant who must pay the slightly higher bills, such a burden would not seriously injure him. The railroads, however, if not promptly permitted to make due provision for their needs will be driven into bankruptcy. What that would mean to the individual merchant, as well as to the nation as a whole, cannot readily be overstated.

Nor is this merely a national question. Our credit abroad, not only for integrity, but even for common sense, is involved. Thousands of American holders of our railroad securities, too, would benefit by the roads being put in a position to pay dividends, and the stockholders' prosperity would inure to the benefit of producers and distributors of merchandise. It is elementary that if the railroads cannot pay dividends they cannot get money except by hand-to-mouth borrowing at high interest, which is unsound finance.

As is well known, many branches of industry are now suffering from the railroads' inability to make expenditures. Such outlays are essential to the railroads' upkeep, to safety in travel and to the prompt transportation of freight. They cannot be made, however, so long as month by month the net income of the roads continues to fall.

The "Economist" again urges, therefore, that the Interstate Commerce Commission, if it wishes to retain the confidence of the nation, must consider this matter both with wisdom and with promptitude. It must lift its eyes from the mass of statistics and other details with which it has been busied and consider not merely the railroads themselves, but the country at large, and, more especially, the numerous industries which, in greater or less degree, are dependent on the railroads' welfare.

So far the Commission has not exhibited this broad spirit. It is a matter of deep regret, for example, that the Commission should have required the railroads to confine their arguments to changes occurring during the last three or four months, instead of permitting them to present every fair reason for granting the advances prayed for. It is a pity, too, that having laid down all sorts of regulations for the roads to follow, the Commission now requires the aid of special, highly paid counsel to examine and cross-examine the spokesmen for the roads. As the New York "World" points out, this attitude of the Commission is precisely what might be expected if the railroads were parties defendant in a criminal action, and as if the Commission stood not merely as a judge, but as prosecutor and jury.

The Commission was authorized and organized by the Federal Government to protect the public. It now looks as if the public might well exclaim: Save us from our friends! It is safe to predict that if the Commission cannot see the signs of the times our citizens, who though their legislators created it, will demand either the abolition of this governmental bureau or a radical curtailment of its powers.

The Railways' Side of the Rate Situation.

(From the New York "Times.")

IT will be seen that the case of the railways is really the case of the country. The prosperity of the railways is inseparable from the prosperity of those who either use or own them. An axiom, probably there never can be good times when the railways are harassed by poverty and apprehensions of bankruptcy.

Under the practice of the Commission, the regulation of the reasonableness of rates was transmuted into the regulation of the reasonableness of profits, and certain rates were lowered because they produced too much income, although the rates themselves were not unreasonable. The next step was to regulate rates not with regard to their reasonableness, but with regard to efficiency of management. Rates were not allowed to be raised because better management might produce larger profits. At neither step was there any consideration of the reasonableness of rates with reference to other prices, both of things that the railways consumed and of all other prices. The ideal rate sought was something reasonable in and of itself, which might be enacted as unchangeably as a law against murder or theft. The conditions produced show that the search for the ideal rate is as futile as the search for "The good, the true and the beautiful." No doubt it exists, but it is not to be found by mortals. In other words, regulation as it has been practiced is a failure. Regulation is not a failure, only the sort of regulation we have had.

All prices are relative to conditions, and change their quality with conditions. Conduct relates to the past, something actually done. Rates are laws and relate to the future. Rates should be higher or lower looking ahead, not looking backward. Dividends look backward, and are related to past rates. New rates are concerned with the future, and it is here that regulation has most conspicuously failed.

The Interstate Commerce Commission's Report.

(From the New York "Times.")

IT is impossible to read the reports and proceedings of the Interstate Commerce Commission without admiring its industry in attempting the impossible, and without thinking that it is as much in need of protection against overwork as the railways are of regulation. It is not every case which can secure a hearing in the Supreme Court, but anybody can demand the attention of the Commission through the mails. Not even a lawyer or a real grievance is necessary. The Commission has a special "informal" docket of 7,600 cases in less than a year, and it is constantly growing. On the formal docket there were 1,081 cases. There is a special docket regarding railway refunds, a fourth section docket, and, most important of all, an "investigation and suspension" docket, the graveyard of attempts to advance rates. Finally there are the hearings and investigations which the Commission undertakes of its own motion.

Inasmuch as no seven men could manage well the affairs of a single great railway, it may be said without dispute or disparagement that no seven men can settle all the country's railway disputes, including a degree of regulation which approximates management. The Commission is buried under its business, and details receive a degree of attention incompatible with due deliberation upon cases involving issues of principle and importance. It is difficult to say that any of this business should go undone, even if it is trivial. But it is easy to see that if the country's important business is to be done by the Commission, the unimportant business should be strained out by some system of appeal, as in the courts. It would be as much in the interest of the country as in kindness to the Commission.

Most of the Commission's report is historical, a smaller portion than usual being given to requests for power to deal with future cases. Still there are some little things the Commission would like to control, such as the capitalization of railways, the compulsory use of steel cars, the unlimited power to inspect anything in writing upon the files of the railways. The list might be prolonged, but the samples suffice to show how far the regulation of rates has expanded beyond the original conception. It is coming to be perceived that the regulation of rates is the regulation of a price, something which has eluded the accomplishment of lawgivers in all times. Always it is discovered that something has been left out of the law, and some further enactment is necessary. At present it is dawning upon the country that there may be too much regulation as well as too little, and that some ideals may be too costly for realization. The present condition of the railways must be charged to the Commission, since they have a great deal more law than they began by asking for, and have never given the country the least intimation that if they had their way conditions like the present would result. The Commission is so thoroughly in control that responsibility is shifted from the railways to the Commission, and this occurs at a time when their promises of good things to come are at a discount.

That is true even in the case where the Commission has come nearest to fulfilling expectation. In its own words, the reform of the express companies is almost complete. Grievances have been remedied, and conditions are "generally satisfactory to patrons of the express companies." The patrons alone are satisfied. The express companies' condition is worse than that of the railways to the extent that their reform is more complete. Only one-tenth of their operating income is left to them, the decrease for eleven companies being from $4,413,000 last year to $404,000 this year. Several leading companies operated at a loss, and are worse off than if they had not worked. If the patrons are not grateful to the Commission, it is hard to perceive what more the Commission could do for them. Nobody is more surprised by this than the Iowa Commissioner of Railways, Mr. Clifford Thorne. His comment upon these figures was that they were "amazing. I don't know whether it spells the end of the express business in this country." Apparently neither Mr. Thorne nor the Commission has any fear that their methods are approaching anything like a similar outcome in a broader field.

A Note of Optimism.

(From "Greater New York," the Official Organ of the Merchants' Association of New York.)

EVERY day brings additional evidences of the return of prosperity. A new and hopeful spirit is everywhere apparent. The courage and resourcefulness of American business men are rapidly clearing the pathways of progress and confidence is crowding despondency to the wall.

The novel conditions which were created by domestic legislation and by the paralysis of foreign trade resulting from the war have not only been largely overcome, but are being turned to good account. The agencies of exchange, temporarily closed, are being put into operation again. The machinery of production, partially halted, is resuming its normal activity. News of factories starting up is taking the place of news of factories closing down.

Influences are still to be found here and there to deny the return of good times, but such denials are designed mainly to furnish basis for argument. They are constantly being weakened by the contradiction of facts.

The Decalogue of Safety.

(From the "Frisco Man.")

THE ten commandments of Safety First promulgated at the annual meeting of the National Council for Industrial Safety, at Chicago, October 13th, are:

"Thou shalt have no other thoughts than thy work.

"Thou shalt make no unnecessary risks, nor try to show off, nor play practical jokes, for by thy carelessness thou mayest do injury which will have effect into the third and fourth generation.

"Thou shalt not swear nor lose thy temper when things do not come just right.

"Remember that thou art not the only one on the job and that other lives are just as important as thine own.

"Honor thy job and thyself, that thy days may be long and in employment.

"Thou shalt not clean machinery while it is in motion.

"Thou shalt not watch thy neighbor's work, but attend to thine own.

"Thou shalt not let the sleeves of thy shirt hang loose, nor the flaps of thine coat be unbuttoned as they may get caught in the machinery.

"Thou shalt not throw matches or greasy waste on the floor, nor scatter oil around bearings, as a dirty worker is a clumsy worker, and a clumsy worker is a menace to his fellow workers.

"Thou shalt not interfere with the switches, nor the cables, nor the engines, nor anything else that thou art told is dangerous."

Loyalty.

(From the Rio Grande "Service Gazette.")

LOYALTY to our company does not mean the mere compliance with the rules and regulations, any more than loyalty to our country means the mere non-violation of the laws of the nation, state, city or county in which we reside.

Loyalty does mean to be faithful to ourselves, to those on whom we are dependent as well as to those who are dependent upon us, by having a definite purpose or aim, in the execution of which we are inspired with interest and enthusiasm, not only with a view of doing something, but in doing that something well. In other words, make everything we do count for the welfare and success of our company and ourselves.

The loyal man has power, poise and steadfastness in that which is undertaken; he loves the task placed before him and instead of work it becomes for him an art.

Only the man who watches the clock with no definite object in view beyond the monthly pay check, is a worker—he may not be disloyal at first, but he has neither the faith nor the fixity of purpose which would raise his task from the plane of meniality, and consequently he becomes a slave instead of an artist; finally he comes to the point where he thinks everyone "has it in for him," and then he does become disloyal, not only to himself, but to others.

Our company is dependent on the loyalty of its employes, and naturally every employe is dependent on the success enjoyed by the company. Anything that affects the prosperity of our company affects every individual connected with it, and to-day as never before are the management and staff of employes so dependent on each other.

In this hour of need, let each and every one of us show our loyalty by increased interest and activity in our daily tasks, by working as if the road was our very own, by heeding the appeals of the management for further efforts towards effecting economical operation in the conduct of our stations and offices, and any other way which will show the management that their interests are our own, that their confidence in us is not misplaced.

Loyalty counts.

Personal

Ivy L. Lee.

IVY L. LEE, executive assistant to President Rea, of the Pennsylvania Railroad, has tendered his resignation, effective January 1st, to become a member of the personal staff of John D. Rockefeller, New York City, and will take up the duties on this staff of Jerome D. Greene, who will in future devote his entire time to the Rockefeller Foundation. Mr. Lee was born on July 16, 1877, at Cedartown, Ga. He was educated at Emory College, Oxford, Ga., and graduated from Princeton University with the class of 1898, and took post graduate work at Harvard and Columbia Universities. After several years' experience in editorial work on New York newspapers he entered the service of the Pennsylvania Railroad in 1906, and took charge of the publicity work of the company, and in 1908 established its publicity bureau. The following year he resigned from the Pennsylvania Railroad and became general European manager for Harris, Winthrop & Company, bankers. On December 1, 1912, he returned to the service of the Pennsylvania Railroad as executive assistant, from which he now resigns. From 1905 to 1907, Mr. Lee was the press representative for the anthracite coal operators and other corporations. He was a lecturer before the London School of Economics. He is a Fellow of the Royal Geographical Society and of the Royal Economic Society, also a member of the American Economic Association, and the Railroad Club of New York.

IVY L. LEE.

John E. Dalrymple.

JOHN E. DALRYMPLE, who on November 8, 1914, became vice-president of the Montreal and Southern Counties Railway, was born January 1, 1869, at Montreal, Canada. Entered railway service July 1, 1883, as junior clerk in treasurer's office, Grand Trunk Railway of Canada; since which he has been, consecutively, April, 1890, to February, 1896, secretary to freight traffic manager, Chicago & Grand Trunk Railway at Chicago; February, 1896, to May, 1899, secretary to general traffic manager, Grand Trunk Railway System, at Montreal; May to August, 1899, division freight agent, same road, at Hamilton, Ont.; August, 1899, to May, 1900, division freight agent, Grand Trunk Railway System, and manager, Grand Trunk Despatch Line, Detroit, Mich.; May, 1900, to March, 1901, general freight agent, Central Vermont Railway, St. Albans, Vt., March, 1901, to April 1902, assistant to second vice-president and general manager, Grand Trunk Railway System, Montreal, Que.; April, 1902, to August 13, 1905, general freight agent, Central Vermont Railway, 1908, general freight agent, Grand Trunk Railway System, Montreal, Que.; May 1, 1908, assistant freight traffic manager, Grand Trunk Pacific Railway, Winnipeg, Man.; October 1, 1911, vice-president in charge of traffic, Grand Trunk Railway System, Grand Trunk Pacific Railway, Grand Trunk Pacific Coast Steamship Company, Limited, Central Vermont Railway Co., and other Grand Trunk affiliated interests, including, effective November 8, 1914, Montreal & Southern Counties Railway.

J. E. DALRYMPLE.

George J. Bury.

GEORGE J. BURY has been selected to succeed David McNicoll as senior vice-president of the Canadian Pacific Railway System. Mr. Bury was born in Montreal in 1866 and was educated at the Montreal College. His whole career has been spent in the service of the C. P. R. He started work in 1883 as clerk in the purchasing department of the C. P. R. Since then he has made a steady progression upward, as clerk in the general manager's office

GEORGE J. BURY.

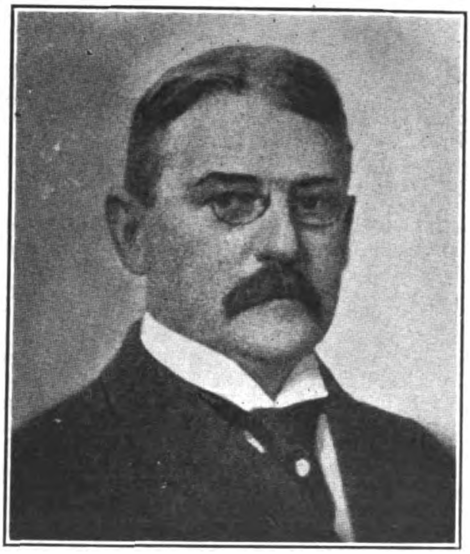
in 1884. He became secretary to the vice-president, now Sir Thomas Shaughnessy, and president, Sir William Van Horne, successively, in 1887, and acting superintendent of the sleeping car service in 1889. Then successively assistant superintendent of the Chalk River Division and superintendent of the North Bay Division. From there Mr. Bury went as divisional superintendent successively at Port William and Cranbrook, B. C. Then he became assistant general superintendent of the Lake Superior Division and in 1902 was appointed general superintendent of the same division.

In 1904, Mr. Bury was appointed General Superintendent of the Central division of the C. P. R. at Winnipeg, and continued in that office some time. Since then Mr. Bury has always been engaged in the western work of the Canadian Pacific, and when a few years ago the late Sir William Whyte retired from the western executive office, Mr. Bury was appointed to succeed him as vice-president. Since that time, Mr. Bury has been in charge of the western interests of the C. P. R., and has taken an active part in public affairs, especially with the upbuilding of the new western provinces and the carrying out of the propaganda for the introduction of mixed farming in the West.

During much of his career, Mr. Bury has worked in close touch with Sir Thomas Shaughnessy, Sir William Van Horne, and Mr. David McNicoll and is fully imbued with the progressive C. P. R. spirit. It is expected that Mr. Bury will return to Montreal within a short time to take up his residence here and assume his new duties at the headquarters of the C. P. R.

E. W. McKenna.

E. W. McKENNA, who has retired from the vice-presidency of the Chicago, Milwaukee and St. Paul, was born October 24, 1848, at Pittsburgh, Pa. He began railway work in May, 1862, with the Pennsylvania, and was messenger and operator until June, 1864, when he was in United States military telegraph service. From April, 1866, to December, 1869, he was with the Pittsburgh, Cincinnati & St. Louis as operator, freight clerk and general superintendent's clerk. He was then for one year train despatcher, and from February, 1871, to April, 1880, superintendent, of the Indianapolis & Vincennes, and the following five years was superintendent of the Jeffersonville, Madison & Indianapolis. During 1886 he was engaged in special work under the direction of the general manager of the Pennsylvania Lines West of Pittsburgh. Mr. McKenna became connected with the Chicago, Milwaukee & St. Paul in June, 1887, and was division superintendent until October, 1890, when he was appointed assistant general superintendent of that road. He left the St. Paul in August, 1894, to become general superintendent of the Eastern district of the Great Northern at St. Paul, Minn., resigning that position to engage in the business of renewing steel rails, being the inventor of a process for securing that result. He organized the McKenna Steel Working Company, of which he was president for a number of years. Mr. McKenna returned to the Chicago, Milwaukee & St. Paul in February, 1904, as assistant to the president, and in September of the following year he was made second vice-president. In September, 1909, he became vice-president of the same road in charge of operation and construction.

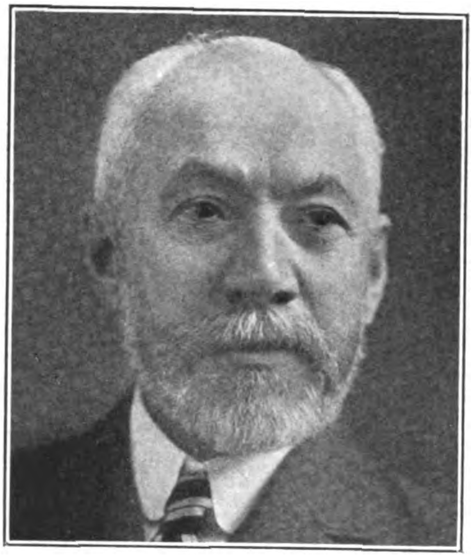


E. W. McKENNA.

David McNicoll.

DAVID McNICOLL, vice-president of the Canadian Pacific Railway, who has been associated with that system for more than forty years, is to retire on January 1, 1915, as the result of his desire to be relieved from the arduous duties of his position in order that he may have the rest and recuperation his present condition of health makes desirable.

Mr. McNicoll is only in his 62nd year, having been born at Arbroath, Scotland, in April, 1852. He started his life career as a railroad boy, fourteen years old, to the North British



David McNichol.

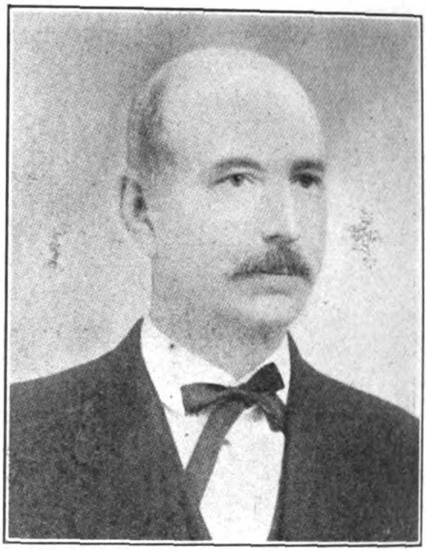
Railway of Scotland, after which he entered the service of the Midland Railway of England, in 1873, where he served for a year.

In 1874, Mr. McNicoll came to Canada and at once resumed his railway work. He was appointed billing clerk on the Northern Railway of Canada, being stationed at Medford and Collingwood, and in less than a year became chief clerk, and was removed to the general offices of the Toronto, Grey and Bruce Railway of Toronto. He remained in this position until 1881, when he became general freight and passenger agent of the same railway, and also general traffic agent of the Owen Sound Steamship Line, trading on the Upper Lakes.

In 1883, Mr. McNicoll was appointed general passenger agent of the Credit Valley, Toronto, Grey and Bruce and Ontario and Quebec Railways, and held this position until these lines were absorbed by the Canadian Pacific Railway. He was then appointed general passenger agent of the Eastern and Ontario Divisions of the C. P. R. and at once won recognition as one of the coming men on the Transcontinental Line. In 1899, Mr. McNicoll was appointed passenger traffic manager, which office he held until the following year, when he was appointed assistant general manager. Almost immediately afterwards, Mr. McNicoll was appointed second vice-president and general manager. After holding this office some years, Mr. McNicoll was appointed senior vice-president and elected a director of the Company.

While a few years ago the arrangement of the Company was changed so that all vice-presidents were placed on an equal basis, each in charge of a special department, Mr. McNicoll, in charge of the Traffic Department, was always recognized as the senior vice-president, and as such has exercised a powerful influence on the progress of the system.

When the C. P. R. a few years ago established its new harbor on the Georgian Bay as the eastern terminus of its late steamship system, it honored its senior vice-president by bestowing upon the new town and harbor the name of Port McNicoll.



E. Raymond.

E. RAYMOND, who has been appointed assistant to Vice-President Storey, of the Atchison, Topeka and Santa Fe Railway, began his railway work driving a team of mules on the Eldorado Branch of this road while it was in the course of construction in 1878. He was made a section foreman in 1880, and since then he has held consecutively the positions of roadmaster, general roadmaster, trainmaster, assistant superintendent, superintendent and general superintendent, appointed to the last named position in 1910.

Eugene J. Henry.

THE Lehigh Valley has created the position of western traffic manager to be located at Chicago and has appointed Eugene J. Henry to fill the place. Previous to his promo-

Eugene J. Henry.

tion, Mr. Henry was the general western freight agent of the Lehigh Valley Railroad.

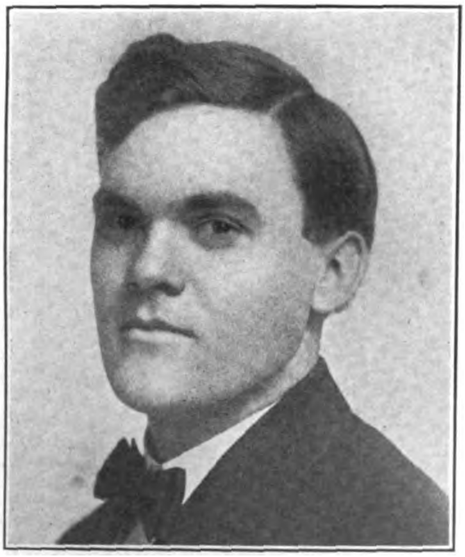
The departure from organization methods by which Mr. Henry will have charge of both freight and passenger business is an effort to bring about a closer co-operation between the two branches of the service. Recently the Lehigh Valley named Mr. W. T. Grier as general traffic manager, reporting only to the vice-president in charge of traffic, with jurisdiction over both freight and passenger business, and his appointment of Mr. Henry follows closely. All passenger and freight men of the Lehigh Valley in Chicago and to the west will report to Mr. Henry.

Mr. Henry has lived in Chicago many years. Born on a ship flying the American flag, of which his father was the skipper, at Penang, East India, his early life was spent in Maine. His cousin, Captain W. P. Henry, who still resides in Buffalo, N. Y., was one of the pioneers in modern day navigation on the Great Lakes. He was the designer of the steel package carrying vessel now in general use on the lakes.

Twenty-five years ago, Eugene Henry went to work for the Lehigh Valley Transportation Company, the concern his cousin had organized, as an assistant agent. The Lehigh Valley Transportation Company is the boat line of the railroad. Since then Mr. Henry has gone steadily upward, his new rank making him among the most important railroad officials in Chicago.

F. G. Hamblen.

F. G. HAMBLEN, who on December 1st, was appointed traffic manager of the Kansas and Memphis Railway, was born at Humansville, Mo., in 1886. He received a common and high school education and entered railway service in 1907 in the freight department of the St. Louis and San Francisco at Springfield, Mo. In 1909, he accepted a joint position with Wells Fargo and Company Express and the Kansas City and Memphis Railway at Rogers, Ark., and held various positions with the latter Company including local agent, trainmaster, commercial agent and general agent until December 1, 1914, when as above noted, he was appointed traffic manager of this road succeeding R. C. Hobbs, who was made general manager.



F. G. HAMBLEN.

Charles S. Lee.

CHARLES S. LEE, general passenger agent of the Lehigh Valley Railroad, who has just been named passenger traffic manager, has been with the system since 1893. His railroad career started in Washington in the seventies with the Big Four system, then known as the "Bee Line." In 1883 he was appointed chief clerk for the passenger department of the Denver & Rio Grande, working under Major S. K. Hooper. In 1887 he became general passenger agent of the Colorado Midland Railway later having charge of both passenger and freight departments. When this line passed into the hands of the Santa Fe, Mr. Lee came to the Lehigh Valley. His connection with the Lehigh Valley has been marked by many important improvements. He took part in the establishment of through service between New York and Philadelphia and Chicago, the inauguration of the Black Diamond Express, which has advertised the Lehigh Valley throughout the world and the first successful operation of a la carte dining service in the United States.

CHARLES S. LEE.

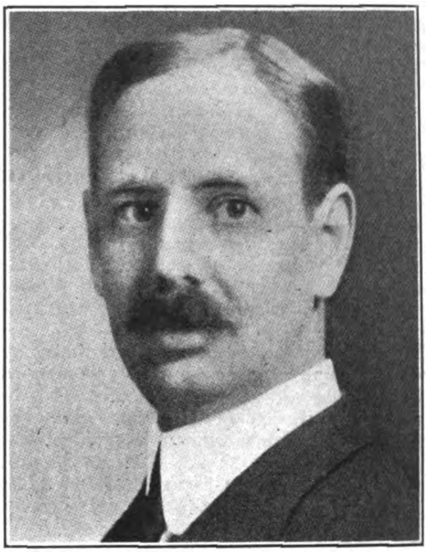
J. L. Graves.

J. L. GRAVES, who has recently been appointed general freight agent of the Southern Railway with headquarters at Knoxville, Tenn., is a native of Georgia. He entered the services of the Richmond and Danville and the Georgia Pacific Railways in 1892 and in 1895 became stenographer to the general superintendent of the Plant System, from there going to the Southeastern Car Service Association in a similar capacity. In 1897, he entered the services of the Southern Railway as stenographer to the second vice-president of the system at Washington, D. C., and since then has successively filled the following positions: Secretary to traffic manager, assistant chief clerk to traffic manager, chief clerk to vice-president in charge of traffic, assistant general freight agent and general freight agent at Memphis, Tenn., and coal freight agent at Atlanta, Ga. He was filling the last named place when he was promoted to the position of general freight agent at Knoxville as above noted.

George W. Hay.

GEORGE W. HAY, until lately general baggage and district passenger agent of the Lehigh Valley Railroad at South Bethlehem, Pa., has assumed his new duties as general passenger agent of the road with offices in New York. He succeeds Mr. Charles S. Lee, who has been promoted to the position of passenger traffic manager. Mr. Hay began his railroad career as a billing clerk in 1888 with the Grand Trunk Railroad in Detroit. With that road he later entered train service and advanced to the position of assistant general baggage agent. In 1906, after being with the Grand Trunk Railroad for over eighteen years, he accepted a position with the Lehigh Valley Railroad as general baggage and district passenger agent with headquarters in South Bethlehem. Since January 1, 1907, when Mr. Hay went with the Lehigh Valley Railroad, he has been marked by his aggressive attitude in regard to work. He is known for his good nature and liberality. When he stepped off the train at South Bethlehem seven years ago, he didn't know a soul in the city. When he left it to assume higher duties in New York, his promotion attracted widespread interest among the hundreds of friends and acquaintances he had formed. He has instituted a system of baggage handling that is second to none in the country, and has been copied by other railroads.

GEORGE W. HAY.



F. A. Lehman.

F. A. LEHMAN, who has been appointed general superintendent of the Western District of the Eastern lines of the Atchison, Topeka and Santa Fe, entered the services of this system as a telegraph operator on August 17, 1888, and has served consecutively in the following places: clerk in the general roadmaster's office, clerk in the trainmaster's office, clerk in the superintendent's office, dispatcher, clerk in the vice-president's office, chief clerk in the same office, superintendent of transportation, assistant to the vice-president.

Paul S. Millspaugh.

PAUL S. MILLSPAUGH, the second recently created assistant general passenger agent of the Lehigh Valley Railroad, will have his offices in Buffalo. The placing of the assis-

PAUL S. MILLSPAUGH.

tant general passenger agent in Buffalo is a recognition of the great importance of the business on the western end of the line. Mr. Millspaugh's work in Ithaca admirably fits him for the new position in Buffalo. In Ithaca he was known to every freshman and graduate of Cornell University for the last twenty years. He has traveled in every direction with football and baseball teams, crews and glee clubs. He is as familiar at Cornell student gatherings as the varsity colors. His success at Ithaca, however, was largely the result of hard work, combined with natural ability.

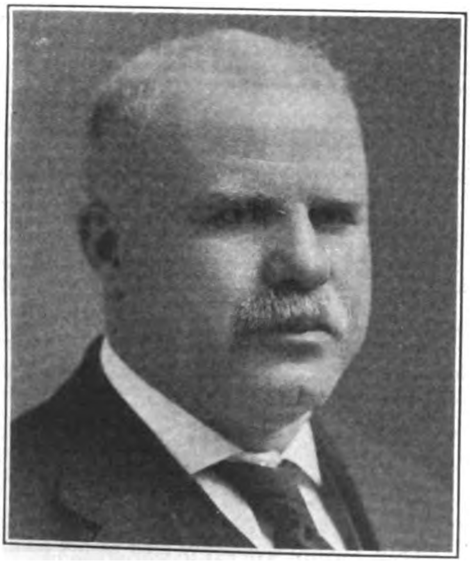
His first railroad experience was in Waverly, New York, as a joint representative of the Lehigh Valley and Erie Railroads, working as assistant auditor and ticket agent. In 1892 he went to Ithaca as ticket agent when the Lehigh Valley opened its line to Buffalo. Successively he was appointed traveling passenger agent, district passenger agent and general agent of the Passenger Department in Ithaca. At Buffalo Mr. Millspaugh's duties will include supervising the passenger business in the region about Buffalo, including Rochester, Niagara Falls, Hamilton and Toronto.

M. V. Richards.

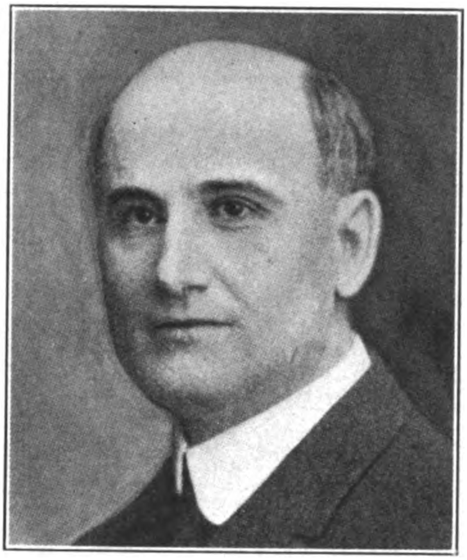
M. V. RICHARDS, industrial and agricultural commissioner of the Southern Railway, Georgia Southern & Florida Railway, Southern Railway in Mississippi, Virginia & Southwestern Railway, Hawkinsville & Florida Southern Railway, Augusta Southern Railway, Tallulah Falls Railway, Northern Alabama Railway, Blue Ridge Railway, Macon & Birmingham Railway, and Danville & Western Railway, has devoted thirty years to that important feature of railway development work.

His initial experience was with the Land Department of the Northern Pacific Railroad, during the early settlement of lands of that company in the Northwest extending from Lake Superior through to the Pacific Coast. In 1887 he was brought east by Mr. Samuel Spencer, then president of the Baltimore & Ohio, and organized the Land, Industrial & Immigration Department of that system. When the Southern Railway Company was organized in 1894, Mr. Richards was one of the early appointees in that year by Mr. Samuel Spencer, the president, and organized the Land and Industrial Department of that company. Recently the industrial, immigration and agricultural development work of the Southern Railway and many of its associated lines was incorporated into one department, which is known as the Industrial and Agricultural Department, in charge of Mr. Richards as commissioner.

The Southern Railway Company has been the leader in the development of the cities and towns and country along its lines, and its activities are recognized and appreciated.



M. V. RICHARDS.



H. C. Pribble.

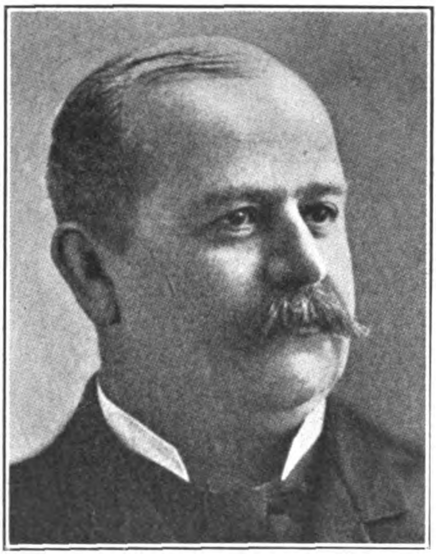
H. C. PRIBBLE has been appointed general claim agent of the Atchison, Topeka and Santa Fe Railway, succeeding the late J. D. M. Hamilton. Mr. Pribble may be regarded as a pioneer in the field of Santa Fe workers, having entered the employ of the company as a boy of seventeen on February 4, 1892, in the freight auditor's office. He served in various offices of the freight auditor's department, mastering every detail of his work and fitting himself all the time for promotions, which came regularly.

In October, 1905, Mr. Pribble was made chief clerk in the agents' account section. In May, 1907, he was appointed chief clerk in the freight claim office. In February, 1908, he was promoted to be assistant chief clerk in the freight auditing department, and in January, 1909, he was assigned to the chief clerkship of the entire office.

The day before Christmas, 1909, Mr. Pribble was chosen to be freight claim auditor, a new position, in which capacity he has served the Santa Fe up to the present time.

Obituary

A. C. Bird, formerly vice-president in charge of traffic of the Gould Lines, died on November 28th, at Pasadena, Cal. Mr. Bird was born at Pittsfield, Ill., on March 4, 1843, and began railway work in 1865 with the St. Louis, Alton and Terre Haute. He held various minor positions until 1872, when he went to the St. Louis, Kansas City and Northern, as chief clerk in the general freight office. In July, 1874, he was appointed general freight agent of that road, and in November, 1879, he accepted a similar position with the Wabash, St. Louis & Pacific, being promoted to superintendent of freight traffic in January, 1880. He resigned the latter position on January 1, 1883, to become general freight agent of the Chicago, Milwaukee and St. Paul, of which road he was freight traffic manager from February, 1889, to December, 1895; general traffic manager of the following four years, and third vice-president from December, 1899, to March, 1903. Mr. Bird then went to the Gould lines as vice-president in charge of traffic, with headquarters at Chicago, resigning in November 1907, since which time he had not been engaged in active railway work.



A. C. Bird.

James Bissett, formerly master mechanic of the St. Louis & San Francisco Railroad at Springfield, Mo., died on November 11th, in Springfield, aged 74 years. He began railway work with the North Madison Railway, at North Madison, Ind., and subsequently served on different railroads. In October, 1899, he entered the service of the Kansas City Fort Scott & Memphis at its shops at Springfield, and later served as master mechanic of its successor, the St. Louis & San Francisco, until his retirement, under the pension rules of the company, about two years ago.

Edwin C. Brown, formerly general superintendent and from September, 1891 to 1910, assistant to the president of the Michigan Central, died in Detroit, Mich., on December 5th, aged 83 years.

George F. Clough, commercial agent of the Lake Shore & Michigan Southern at Cleveland, Ohio, died on November 8th, aged 38 years.

L. Freeman Day, formerly vice-president and general manager of the Minneapolis & St. Louis Railroad and of the Iowa Central Railway, died November 13th at the Great Northern Hotel in New York. Mr. Day was born in 1858 in De Witt County, Ill., and was educated in the public schools. He started in the railroad business in 1885 as a clerk in the employ of the Texas & St. Louis Railroad. Two years later he became chief clerk in the general freight office of the St. Louis Southwestern Railway and rose rapidly until, in 1892, he was freight traffic manager. After serving in various positions on other roads, in 1897 he was appointed general manager of the Minneapolis & St. Louis. Two years later he became vice-president of the road and in 1900 was appointed to a similar position on the Iowa Central. From 1893 until 1897, he was chairman of the Southwestern Traffic Association. Mr. Day retired from active business about five years ago.

Harry Dean, division freight agent of the Pere Marquette Railroad at Detroit, Mich., died on November 22nd, in Detroit, Mich.

Charles Dyer, second vice-president of the National Dump Car Company, Chicago, and formerly general superintendent of the Colorado & Southern Railway, died at his home in Denver, Colo., November 8th, aged 69 years. Previous to his service with the Colorado & Southern, 1870 to 1900, he was successively clerk and operator, agent, chief despatcher, trainmaster, and division superintendent with the Atchison, Topeka & Santa Fe Railway.

Henry Fonde, general agent of the Southern Railway at Knoxville, Tenn., died at his home in that city on November 28th.

James Geddes, assistant to general manager of the Louisville & Nashville Railroad, died at Nashville, Tenn., November 15th. He was born January 16, 1828, at Portsoy, Banffshire, Scotland. Until 1850 he was connected with the Great Western Railway, England, and on coming to this country, became associated with the Louisville & Nashville, assisting in the original survey of that road. He celebrated his half century in the road's service September 2, 1901, at which time his associates presented him with a silver service and he was appointed assistant general manager.

J. T. Hazzard, agent of the Blue Ridge Dispatch, at Chicago, died in that city November 9th.

Harry A. Jones, retired assistant treasurer of the Southern Pacific Company, died at his home in San Francisco, November 12th, aged 63 years. Mr. Jones was born in Madison, Ind., and entered the railway service as a freight clerk with the Missouri Pacific Railway in 1870. In 1906 he was appointed freight traffic manager of the Southern Pacific. On July 15, 1912, he became assistant treasurer.

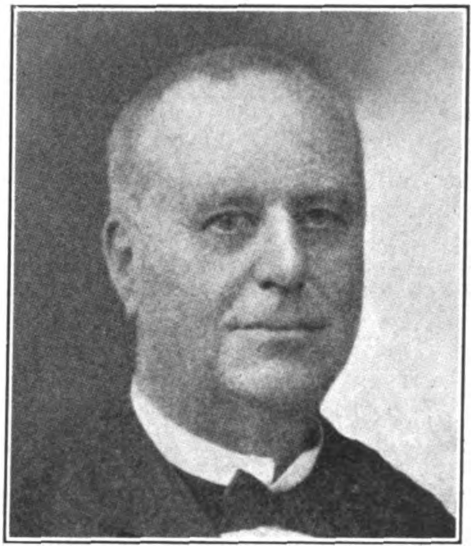
C. C. Mallard, superintendent of the Arizona Eastern, with headquarters at Globe, Ariz., died at New Orleans, La., on November 24th, aged 54 years. He had been in railway service since 1879, when he commenced as rodman on Morgan's Louisiana and Texas Railroad. Subsequently, he was assistant engineer on the Sabine and East Texas and the Houston & Texas Central; engineer for the contractors on the Chicago, Texas & Mexican; roadmaster and assistant engineer of Morgan's Louisiana & Texas, and assistant superintendent bridges and buildings of the Atlantic System of the Southern Pacific, until July, 1898. He was then until August, 1905, successively division engineer of the latter company and assistant superintendent of the Louisiana Lines. From September, 1905, to January, 1906, he was assistant engineer and roadmaster of the Gila Valley, Globe and Northern, and since the latter date Mr. Mallard has been superintendent of that road and its successor, the Arizona Eastern.

Henry D. Mirick, who was general freight agent of the Missouri, Kansas and Texas in 1871, died in Washington, D. C., November 26th, aged 79 years.

John C. Muir, general superintendent of the Chicago, Terre Haute & Southeastern Railway, died at Terre Haute, Ind., on November 4th, aged 50 years. Mr. Muir began railway work in June, 1879, as messenger for the Atchison, Topeka & Santa Fe Railway, with which road he remained until August, 1895, being employed successively as telegraph operator, station agent, traveling auditor, train despatcher, and chief train despatcher. He then went to the Chicago & Eastern Illinois Railroad as chief train despatcher, and subsequently was trainmaster and superintendent until June, 1911, when he was appointed general superintendent at Danville, Ill. In November of the following year, he became superintendent of the Chicago Division at Danville. He went to the Chicago, Terre Haute & Southeastern as general superintendent in March, 1913.

Hartwell Osborn, commercial agent of the Queen & Crescent route at Chicago, died at his residence, Evanston, Ill., November 13th, aged 74 years.

Lucius Tuttle, former chairman of the Board of Directors of the Boston and Maine Railroad. died November 30th at his home in Brookline, Mass. Death was due to angina pectoris. Mr. Tuttle was born at Hartford, Conn., March 11, 1846, and entered railway service in 1865, with the Hartford, Providence & Fishkill Road. He was general ticket agent of that road when it was absorbed by the New York & New England and he became assistant general passenger agent, and successively general manager and ticket agent and assistant to general manager of the Eastern Railway. In 1885, he entered the employ of the Boston & Lowell Road as its general passenger agent, but in two years he resigned to become the general passenger traffic manager of the Canadian Pacific Railway. Later he became manager and then first vice-president of the New York, New Haven & Hartford Railroad. He was elected to the presidency of the Boston & Maine Road in 1895. In October, 1910, he was made chairman of the Board of Directors.



LUCIUS TUTTLE.

Owen J. Travis, formerly superintendent of bridges of the Colorado and Southern and the Ft. Worth and Denver City, died at Everett, Wash., on November 14th, aged 66 years. Mr. Travis entered the service of the Keystone Bridge Company in 1868 as bridge builder at Kansas City, Mo., and from 1877 to 1881, was superintendent of traffic of the St. Louis Bridge Company. He was then for three years superintendent of bridges and buildings of the Middle Division of the Wabash, St. Louis and Pacific, and from 1884 to 1889, was general foreman of the Chicago and St. Louis Division of that road. The succeeding four years he was with the Iowa Central as superintendent of bridges and buildings, going to the Elgin, Joliet & Eastern in 1893, in a similar capacity. He was superintendent of bridges of the Illinois Central from 1897 to 1903, when he became superintendent of bridges and buildings of the Colorado and Southern and the Ft. Worth and Denver City at Fort Worth, Texas. Mr. Travis held the latter position until his retirement from active railway service in 1910.

J. H. Waters, president and general manager of the Florence & Cripple Creek Railroad, died November 27th, as a result of injuries received in a collision between a railroad motor car and a light engine at Cripple Creek, Colo., on the preceding Wednesday. Mr. Waters received a fractured skull and internal injuries. He never regained consciousness. Mr. Waters was 51 years old.

John Watson, formerly superintendent of dining cars of the Grand Trunk Railway, died at his home in Battle Creek, Mich., November 27th, aged 79 years.

Financial

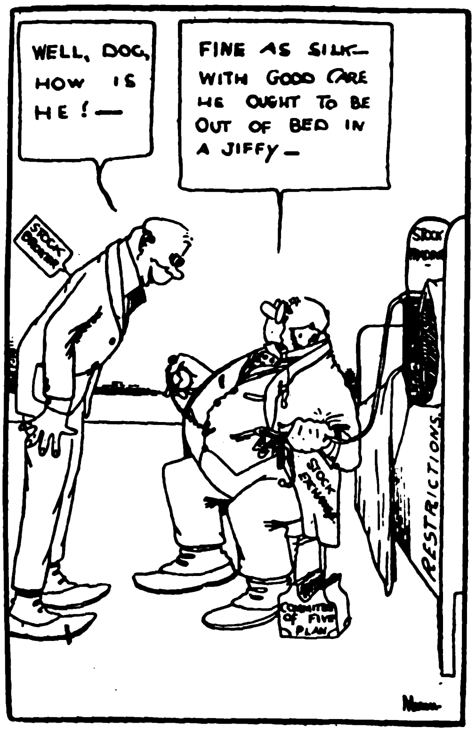
Financial Results for the First Quarter of the Fiscal Year.

WITH over 6,000 more miles of line in operation, railways of the United States closed the first quarter of the current fiscal year with a loss of almost $18,000,000 in net compared with two years ago. Though the quarter's gross earnings were $7,740,000 smaller than then, the cost of hauling the contracted business rose $10,200,000, resulting in a net loss of $17,940,000.

The figures, based by the Bureau of Railway News and Statistics on the official figures of the Interstate Commerce Commission, apply to over 255,000 miles of operated railway, the total operated mileage of the country, and take into account some 27,000 miles of so-called small roads not appearing in the Commission's totals.

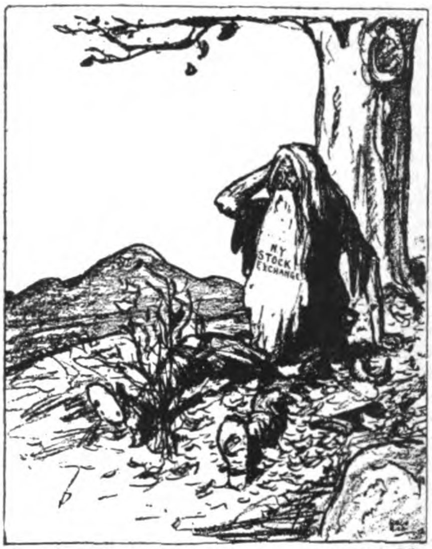
Resulting from drastic curtailment in expenses put into effect since the great slump in traffic began just a year ago, there has been effected finally, for September, a small increase in net compared with last year. This improvement, it should be noted, however, is due almost wholly to the extremely bad showing made a year ago, when constantly dropping business was being hauled at constantly expanding cost and net revenues were suffering losses compared with the previous year of from $5,000,000 to $20,000,000 every month. Only by comparison with these showings a year ago is the improvement in net in the current September figures seen in true proportion.

CONVALESCING


WELL, DOC, HOW IS HE!—
FINE AS SILK— WITH GOOD CARE HE OUGHT TO BE OUT OF BED IN A JIFFY—
STOCK BROKER
STOCK
STOCK EXCHANGE
RESTRICTIONS
COMMITTEE OF FIVE PLAN

—From the *Wall Street Journal.*

RIP'S AWAKENING



—From New York World

—From the *Wall Street Journal.*

For the three months of the first quarter, on the other hand, even in comparison with last year's showing, there is a further loss of $429,000 in net revenues, while after an expansion of $1,396,000 in total taxes, net income drops $1,825,000 below the poor showing of a year ago.

For September and the first quarter the Bureau's totals for the entire railway mileage follow, compared with last year:

September—	1914	Loss
Mileage	255,365	*3,179
Gross	$276,778,000	$14,221,000
Expenses	183,330,000	14,850,000
Net	93,448,000	*629,000
Taxes	11,922,000	*455,000
Net Income	81,526,000	*174,000
First Quarter—		
Gross	813,126,000	38,503,000
Expenses	551,922,000	38,074,000
Net	261,204,000	429,000
Taxes	35,506,000	1,390,000
Net Income	225,698,000	1,825,000

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* Increase.

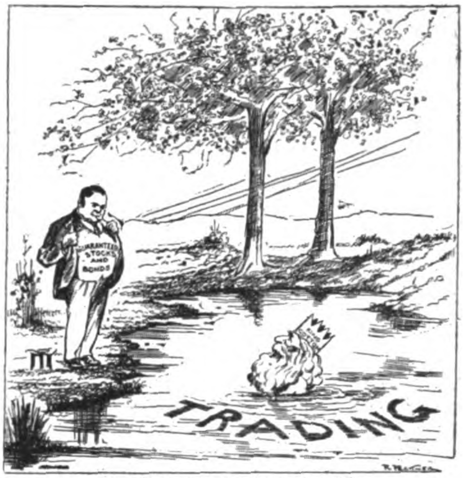
For nine months to September, comprising three-quarters of the current calendar year, there has been a drop in railway traffic on the Country's entire mileage, of $121,193,000, compared with the nine months in 1913. Despite their most strenuous efforts to keep expenses under control on this violent ebb tide of business, the railways succeed in cutting only $69,612,000 from the figure of the year before, and with more than 3,000 of additional railway in operation, compared with 1913, the railways in these nine months earned $51,581,000 less net revenue.

Revenues and Expenses of Steam Roads for September.

THE Bureau of Railway Economics at Washington has issued a summary of revenues and expenses of the steam roads in the United States for September which shows, in brief, that operating income for that month, reduced to a per mile of line basis and compared with that for September, 1913, shows a decrease of $3.00 or 0.9 per cent, while operating income per mile for September, 1913, showed a decrease of 8.1 per cent, as compared with that for September, 1912. Total operating revenues per mile for September decreased 6.0 per cent, as compared with September, 1913, operating expenses per mile decreased 8.5 per cent, and net operating revenue decreased 0.5 per cent.

Railways operating 228,041 miles of line are covered by this summary, or about ninety per cent of all steam railway mileage in the United States. Their operating revenues for the month of September, 1914, amounted to $269,581,592. This amount includes revenues from freight and passenger traffic, from carrying mail and express, and from miscellaneous sources connected with rail and auxiliary operations. Compared with September, 1913, these operating revenues show a decrease of $13,792,318. Total operating revenues per mile averaged $1,182 in September, 1914, and $1,257 in September, 1913, a decrease of $75, or 6.0 per cent.

Operating expenses, which include the cost of maintaining track and equipment, operating trains, securing traffic, and of administration, amounted to $178,086,808. This was $14,380,302 less than for September, 1913. These operating expenses per mile of line averaged $781 in September, 1914 and $854 in September, 1913, a decrease of $73 per mile, or 8.5 per cent.



COME ON IN, THE WATER'S FINE.

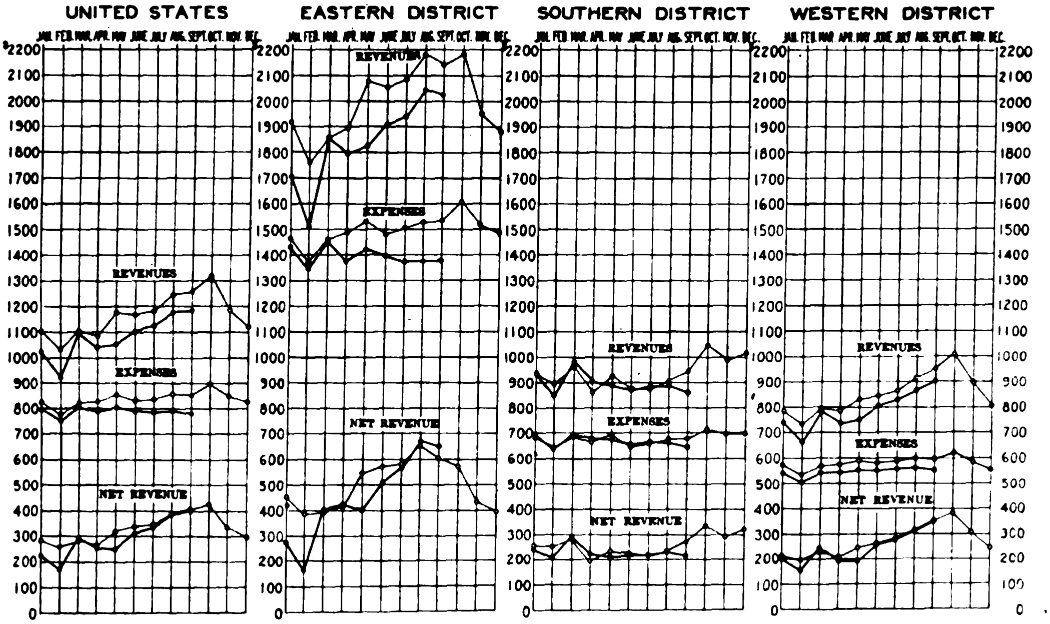
—From the *Financial America.*

Net operating revenue, that is, total operating revenues of rail and auxiliary operations less operating expenses, amounted to $91,494,784, which was $587,984 more than for September, 1913, but this increase is due to increase in operated mileage, as is shown by the fact that net operating revenue per mile decreased. Net operating revenue per mile of line averaged $401 in September, 1914, and $403 in September, 1913, a decrease of $2 per mile, or 0.5 per cent.

MONTHLY REVENUES AND EXPENSES PER MILE OF LINE

ROADS HAVING ANNUAL OPERATING REVENUES ABOVE $1 000 000

CALENDAR YEAR:
1913 •
1914 •



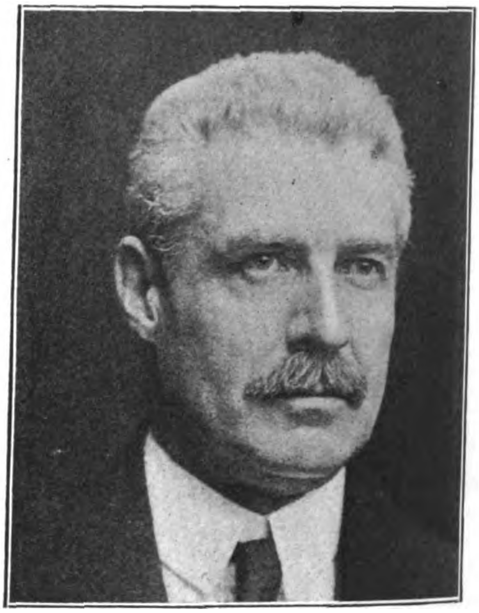
The points on the vertical lines are of significance only in showing the condition for the particular month. The lines connecting the points assist in tracing the change from month to month but do not indicate the trend during the month, nor are they cumulative for the period.

Taxes for the month of September amounted to $11,454,768, or $50 per mile, an increase of 2.0 per cent over September, 1913.

Operating income, which is net revenue from rail and auxiliary operations, less taxes, averaged $351 per mile of line, and in September, 1913, $354, thus decreasing $3, or 0.9 per cent. Operating income for each mile of line for each day in September averaged $11.69 and in September, 1913, $11.80. Operating income is that proportion of their operating receipts which remains available to the railways for rentals, interest on bonds, appropriations for betterments, improvements, new construction and for dividends.

The Necessity for a Constructive Policy in the Practice of Public Regulation*

By Samuel Rea, President, Pennsylvania Railroad Company.



Samuel Rea,
President of the Pennsylvania Railroad.

Although holding no commission to speak for the railroads as a whole, the seriousness of their present position may warrant an expression of my views on the general railroad situation. I therefore appreciate the fitting opportunity you have given me to present certain suggestions for the consideration of this thoroughly representative gathering.

It is no difficult task to sum up the present railroad situation. We can all see that something is wrong, but no useful purpose will be served unless we can suggest some constructive methods of improving railroad conditions.

Examine, for instance, the Eastern railroads, which reach the centres of the largest population and heaviest traffic of the country, and you will find greatly diminished gross revenues and a still greater proportionate reduction in net revenues; their purchasing powers are stringently curtailed, and their credit has been greatly weakened. This condition arises from causes largely beyond their own control, so that the return earned during the past year upon the money invested in the road and equipment of the railroads amounted to less than four per cent. This serious condition is not new, but it is now acute. We have been living on hope at least since 1910, when the downward trend was clearly indicated; how much longer we can exist on that precarious asset, I will not venture to say, except to suggest that it takes more than hope, advice, or enthusiasm, or all combined, to pay wages and taxes, provide satisfactory service, pay dividends, and retain a proper credit basis to obtain capital for improvements and extensions.

Increased traffic will not cure the railroad malady, for remember that up to the present all their economies and efficiency, obtained by increased train loads, etc., have been offset by increased costs, wages and taxes. These companies therefore need not merely the very moderate increase in rates for which they petitioned the Interstate Commerce Commission, but also the revenue that can be secured by working out in practice the various other means suggested by the Commission for increasing revenue.

A full consideration of the railroad position and the effects of public regulation must not however stop there. Irrespective of any decision in the rate case now pending, whether it be finally favorable (as we trust it will be) or unfavorable, it is evident that the time is ripe for suggestions concerning constructive railroad legislation and policy.

I need not remind you that after agriculture—and what would agriculture be without railroads?—the railroads are not merely the most important industry in the country, but they are also in their essence public institutions performing functions which are by their very nature of a public character. They are owned in part by an army of individuals, actually holding their stocks and bonds, and in part by institutions such as savings banks, insurance companies, universities, hospitals and other philanthropic enterprises, in the welfare of which many more millions of individuals are vitally concerned. These are largely dependent upon income derived from the money they have invested in the service of the public, and rightfully they hold railroad managers responsible for this income. It should be the business of government regulation, not merely to see that the public is properly served by these railroad managers, but also to see that the owners of the properties are fairly compensated, and that their revenues are sufficient to properly discharge their duties to the public. Otherwise the managements of these companies will be prevented from efficiently discharging their obligations to the public and their owners. The railroads must give the public good service and their operations must be continuous in good times and in bad. Moreover, the railroads of the country pay over $140,000,000 in taxes every year, a sum equal to five per cent on nearly three billions of dollars, requiring over 16 per cent of their net operating revenues. They pay good wages to their own employes and furnish profitable employment for the industries which furnish railroad materials and supplies.

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*Remarks made at Chamber of Commerce meeting, New York, December 3rd, 1914.

But apparently the interests of everyone have been safeguarded under public regulation except the interests of those who furnish the money for the public service; and we must protect these investors upon whom we must rely for future capital. Failure in the last decade to protect the railroads and railroad investors has at last produced a lack of confidence in public regulation, and we now know that through the weakness of the railroads, the whole country is suffering. Upon this great industry, through the operation of too many hastily enacted Federal and State laws, and by failure to provide and adjust the machinery necessary to enforce these laws by reasonable and practical methods, a mistaken policy of repression has been imposed, which has not permitted railroad charges to increase with the enforced increase in the cost of their operations. This has caused loss to existing railroads, and has precluded the building of new lines, and the making of needed improvements and betterments on the present roads. The inherent weakness of the present situation is that we as a people seem to have assumed that the present railroads and their equipment facilities are complete, and are sufficient for present and future needs, and that the chief function of public regulation is to curtail their revenues, increase their expenses and lessen the margin of return. In this growing country, the present railroads are far from adequate, and therefore the policy of repression is bound to bring, if it has not brought already, a day of reckoning. Let us not forget that if we expect people to continue supplying their savings for our railroads, present and future, their earnings must continue to be what these investors regard as reasonable and sufficient, and they are not likely to be governed by the opinions of legislators, or commissions in this respect. The present policy of repression must be modified and lack of confidence must be removed, or these millions of investors will seek other avenues to utilize their capital.

There are some particular features of the railroad situation, incidental to public regulation, to which I would direct attention.

The railroads are existing under conditions that breed business depressions, because of arbitrary, heavy and frequently unjustifiable burdens imposed upon them, by legislatures, State and National, and there are still many wasteful legislative experiments forthcoming unless the authors discover that the public will not willingly pay their cost. Public opinion is now convinced, I feel, that the railroads are entitled to more equitable treatment under public regulation, and that opinion and your very kind invitation have opened the way for me to offer some suggestions.

The present situation is not the result of premeditated action or of a clearly defined punitive public policy; it is the result of our failure to fairly adjust our national conception of the rights and duties of these common carriers, and to adapt our new laws for public regulation to rapidly changing commercial and financial conditions. It is not, therefore, a case for mere sterile criticism, but for mutual study and co-operation to the end that the evils now existing may be clearly recognized and corrected. The public, the railroads and the commissions, State and Federal, should unite in an effort to ascertain and finally establish the principles upon which wise regulation should hereafter proceed, so as to retain for the people at large the advantage of our American system of private ownership and operation under public regulation, and avoid being forced into another system far less desirable in a country such as this.

Can it reasonably be contended that any large and important business enterprise, whether individual or corporate, could be successfully conducted if, notwithstanding radically changed conditions and substantially increased costs of production, it could only increase prices subject to the power of an administrative body which on its own initiative and without a hearing might suspend the increased prices for an extended period? Under the existing Federal law, increases in railroad rates, no matter how reasonable or justifiable, may be suspended without any hearing, for at least four months after they would have become operative. In practice, this means five months after the rate schedules are filed with the Commission, and the suspension may be extended by the Commission for a further period of six months. It is, therefore, possible even if the new rates are justifiable, for the railroads to lose nearly a year of benefit from them while the Commission is determining their reasonableness. Is the public welfare promoted thereby? From practical experience and in a spirit of fairness and justice, I should say it is not, and the period of such suspension, and the determination of the question at issue, ought to be restricted to sixty days after the date of filing new rate schedules with the Commission.

Another trouble in the present situation is that the Interstate Commerce Commission has been over-burdened with work and with responsibilities, many of which must be deputed to a large corps of subordinates, so that in many instances, direct consideration by the entire Commission is impossible. The work of the Interstate Commerce Commission, as originally designed in 1887, was to prevent unjust discrimination in rates or service, to see that rates were reasonable, to secure publicity of railroad rates and practices, prescribe uniform railroad reports, and primarily act as a referee between the public and the railroads. The Commission was given limited, but well defined, powers within reasonable scope. Now, however, as the result of new laws, the scope of its control of railroad operations and development has been largely extended. It could materially assist railroad development, but so far it has proven impossible for seven men in one centre to act not merely as regulators but as administrators of the railroads, leaving the financial results and responsibility of that administration to be borne by the companies and their owners.

There is also a certain amount of disagreement between the Federal and State laws and orders of commissions, and of failure to recognize the inroads on railroad revenues of new laws, orders and of governmental awards.

Let me use just one example of the commercial chaos resulting from such conflict. The recent difference in the views of the Interstate Commerce Commission, on the one hand, and the Public Service Commission of New York, on the other, in connection with the allowances to industrial railroads, has, during the last eight months, resulted in freight rates, via the lines of the New York Central (whose route is intrastate) from one of the large industries at Buffalo to New York City, and to other places on its line, lower than via any of the other trunk lines, as their routes between Buffalo and New York are interstate, and there is nothing that the other railroads could do to meet this situation, injurious as it was, not only to themselves, but also to industries local to their lines. The same situation arising from the same cause, existed in the State of Pennsylvania, as between the Pennsylvania Railroad Company and other trunk lines. These differences must be reconciled for the welfare of the public and the railroads.

In the practice of public regulation, from the constructive side, I would at this time suggest:

First.—That the Interstate Commerce Commission should be materially increased, and so organized as to be able to deal promptly with the very important railroad questions affecting all parts of this large country, and thus conserve the time and energy of railroad officers, the public and the Commission. The additional members of the Commission should be selected from men having experience in railroad management, operation, traffic and finance, and if men of broad business experience were also added, it would be very helpful.

Second.—That the position should be placed beyond political influence, by a long tenure of office, and with compensation sufficient to attract and retain men of the widest experience and greatest ability. We recognize the necessity for men of this character and technical experience in dealing with banking and other broad business enterprises, and we must recognize that equally wide experience is just as essential to deal intelligently and wisely with the railroad problems.

Third.—That the regulatory power of the Interstate Commerce Commission should be clearly extended to the supervision and control of all rates and practices which directly, or remotely, affect interstate transportation or commerce.

Fourth.—That the Interstate Commerce Commission should be given the power to interfere, by appropriate action, whenever necessary to maintain a rate structure approved by, or satisfactory to, it, even though, to accomplish this, it should be necessary for the Commission to prevent reductions of rates which would have a contrary effect, or to compel advances of rates found by the Commission to be unreasonably low. An unreasonably low rate may be beneficial to some one or more shippers, but the rates of some other shippers are sure to be disadvantageously affected thereby.

Fifth.—That for the existing repressive policy of public legislation, a constructive policy should be substituted, and existing legislation should be so modified as to permit the railroad companies to do their full share in the development of the country's resources. It will naturally follow that the Commission should be enabled, and indeed required, in the determination of questions involving railroad rates and practices, to deal with the questions before it, not merely from the standpoint of the shipper and the carrier, but from the larger standpoint of the entire country, and on such economic and business lines that due and controlling weight may be given to these larger interests essential to the public welfare. Such a change in public policy and legislation is requisite to encourage the investment of private capital for railroad extensions and additional facilities.

For instance, I seriously question the practical utility of railroad valuation, for I believe that very few railroads are over-capitalized, and I know the public is not required to pay higher rates on weak roads than on the more conservatively capitalized railroad lines. Therefore, while the railroads are cordially and fully co-operating in the work of Federal valuation, yet under present conditions and when economies are being enforced everywhere, I look to the Commission, under such an equitable public policy as I have in mind, not to commit the country and the railroads to so vast an expenditure until one system, or the lines in one section of the country, shall first be valued and the results demonstrated to the country.

Sixth.—That, as another necessary result of a constructive and equitable policy towards railroads, and with a commission amply strengthened to deal with railroad questions, Congress would no doubt refer to the Commission for investigation and report, such legislation as affected wages, employes' working hours and conditions, increased taxes, boiler inspections, extra and unnecessary men on trains, non-compensatory mail and parcel post service, railroad valuation, improved stations, grade crossing elimination, and other matters which seriously affect railway revenues and expenses. Due weight to these heavy expenditures would thus be given in approving rate schedules, and a tangible basis would be thereby provided on which to continue the regulation of these matters (if essential to the public welfare) without injustice to the railroads. The inability of the railroads to protect themselves in respect to increased wages fixed by governmental action could not be more forcibly presented than in the November, 1913, report of the Board of Arbitrators under the Newlands Act, relating to conductors' and trainmen's wages on which your president served as chairman.

Seventh.—That the extraordinary power to suspend rates without a hearing should be limited to a period not exceeding sixty days after being filed with the Commission, or some such reasonable period. If after such hearing as could readily be had within this period, coupled with the information and data already possessed by the Commission, from the current and special reports made by the railroads, under its uniform accounting regulations, the Commission could not be satisfied that the increase proposed ought not to be made, the rate should rightfully become effective, and the present confusion and delay would end. The railroads as an act of self-preservation will always endeavor to make their service and facilities satisfactory, and rates reasonable, because only in this way can they make friends, encourage business and earn profits.

In conclusion I say that considerable emphasis has been laid upon the fact that the railroad companies, and their owners, are deprived of an appeal to the courts for the protection of what they conceive to be their just rights as against the orders of the Commission. I am willing, however, to continue relying upon public regulation and public opinion to protect the railroads, although I cannot overlook the fact that the Eastern railroads are earning a return of less than four per cent on their property investment. If this is not approaching confiscation, how much less must we earn before reaching that point? Surely the country does not want impoverished railroads unduly restricted in the conduct of their business. What it does want is strong, aggressive lines, built and improved with private capital, efficiently managed and operated, subject to equitable public regulation.

What I have suggested may not meet all the difficulties in the public regulation of railroads. Other helpful suggestions will doubtless be forthcoming from railroad and business men and commercial bodies, etc., and, I trust, from some statesmen. There can be no difference of opinion that public regulation must be equitable so far as the railroads are concerned, and must be adjusted to promptly respond to business conditions. Such a change will encourage initiative and enterprise in railroad management and will assure investors, here and abroad, that their money has the full protection of our laws and that they will be equitably dealt with.

I believe in regulation by commission, and I urge, therefore, that we do not encourage destruction of such regulation, but rather its conservation, by adapting it, as we have banking regulation and other laws, to suit the needs of the country as they change from time to time. We must look beyond the present obstacles and view the whole subject from the staesman's standpoint. Under an enlightened policy of public regulation, but not repression, the railroads will be placed and kept in a strong position to meet increased traffic demands, as well as to live healthfully in times of depression. If we now by equitable dealing ensure their strength, one of the greatest obstacles to the recovery of financial confidence and business enterprise can be removed.

Our Inconsistent National Policy in Respect to Transportation

By William A. Robertson.

William A. Robertson.

Under a system of popular government, where the suffrage is very widely extended, as in the United States, it must sometimes happen that public enthusiasm will expend itself in advocacy of policies which are calculated to injure the true interests of the cause which the voters have most earnestly at heart. More than this, the government may occasionally find itself committed to the support of two different lines of action which, when analyzed, are widely at variance. The truth of these assertions has more than once been emphasized in our financial history. It can be easily discerned at the present time in the nation's attitude toward the problems of transportation.

Between ten and fifteen years ago, the American people undertook a course of aggressive supervision over the transportation of merchandise by land. There had previously been a great deal of regulation of one sort or another—some of it very drastic—but it had emanated chiefly from the States. Necessarily, therefore, it had dealt only with commerce moving within the confines of a single political division of our Union. Prior to 1902, regulation of interstate commerce by the Federal Government can hardly be said to have been very aggressive. In that year, the suit against the Northern Securities Company was begun. Since that date, the Government at Washington has actively exerted itself to control the movement of commerce between the States. This activity has showed itself sometimes in the shape of suits against railroad corporations—as in the case of the Northern Securities Company, or the St. Louis Terminal Railroad—and sometimes in the form of statutes amplifying and extending the powers of the Interstate Commerce Commission.

During nearly the same period, there has been another important popular movement along an entirely different line. The American people have been considering, and have partly undertaken upon a very comprehensive scale, the development of a far-reaching system of transportation by water, including the attempt to build an extensive mercantile marine. It was in 1901 that the first National Rivers and Harbors Congress met at Baltimore; and in 1903 that the electors of the State of New York voted to improve the Erie Canal at a cost of $101,000,000. Since then, the movement for waterway improvement has been persistent and successful.

Both of these great popular agitations have been based wholly or in large part upon the belief that the railroads were charging excessive rates for the carriage of freight, and that, unless restrained in some manner, and compelled to move goods more cheaply, the American people would suffer extortion, the material development of the country would be checked, and the United States would fall behind in the race for industrial supremacy.

It must be evident, however, that in the long run, transportation by water must go hand in hand with transportation by land. Both are but parts of one desired end, namely, the opening and developing of the entire country, so that its resources may be utilized and laid upon the markets of the world. The two things must be made to contribute to the common end, and it will not do to encourage one system of transportation, and make its burdens light, while embarrassing and encumbering the other. That will simply make a distorted and one-sided result.

The purpose of the present article is to contrast the policy of the United States toward transportation by water as against its policy in dealing with transportation by land. We shall then be in a position to consider whether the two policies are harmonious, and conducive to the general prosperity and welfare of the voters and taxpayers at large, or whether they are really discordant, and calculated to arrest development and retard real progress. Let us consider the case of water transportation first.

Commerce by water is now enjoying the benefits of a policy of very liberal assistance from both the Nation and the States. So far as the National Government is concerned, this assistance to American shipping is given in four principal ways, whether that shipping be upon the high seas or upon inland waters.

First.—Congress has for quite a number of years, been pouring forth public treasure upon the improvement of waterways to an extent that few of us fully realize. Our periodical river and harbor bills are intended to bring about the enlargement and improvement of existing waterways, and also to create new ones. The work is undertaken both upon rivers and harbors already navigable, and also upon bodies of water that are naturally too shallow for vessels of any considerable size and draught. In either case, the Government seeks to deepen the channel to some prescribed limit. In still other instances, the Government makes an entirely new waterway, and enters actively into the work of canal building, as for example, in the case of the Norfolk and Beaufort Inlet Waterway.

The sums which Congress has thus appropriated from time to time are so princely in amount that the mere name "River and Harbor Bill" has acquired an odious notoriety. Of this the average citizen is vividly aware. But comparatively few persons realize how great have been the actual sums which have been thus spent in the past few years. The 59th, 60th, 61st and 62d Congresses appropriated, altogether, for river and harbor improvement, over $189,000,000.

No one seriously entertains the idea that these projects will ever return into the National treasury anything like the money which they have drawn out. Most of the public benefit that is contemplated is altogether indirect and general, consisting in the real or supposed advantage to commerce and the resulting increase in the general property of the people at large. There is no thought that any system of tolls or tonnage taxes or harbor dues will ever result in a revenue sufficient to return the principal back into the Federal treasury. We are not now speaking in either condemnation or approval of the work of waterway improvement. Space entirely forbids an attempt to enter upon such a discussion. We are simply calling attention to the facts as they exist in cold and forcible reality.

Second.—Congress also seeks to aid shipping by providing that all materials for the building and equipment of ships may be imported in bond, free of duty. In other words, the Government tries to give relief from the burden of taxation.

Third.—The general Government maintains a splendid system of lighthouses and beacons along our entire coast line and up the courses of many rivers.

Fourth.—Since 1891, the Government has stood ready to pay quite liberally to American vessels for the carriage of the mails upon the ocean.

Over and above this contribution of the general Government to the cause of commerce by water, many of our States are also undertaking to build canals or improve those already existing. Witness, for instance, the improvement of the Erie Canal by New York State at the cost of over $100,000,000. It is not expected that any tolls will be charged. It will be a free gift to American inland shipping.

As soon as we turn to the subject of transportation by land, we are struck with the contrast in the attitude of both the public and the Government. There is a complete "right-about-face." There are no liberal gifts of money and no freedom from taxation. In place of these we find their very opposition, burdensome taxes, embarrassing regulation, repressive laws.

The time has been when all this was far different. During the 40 years that followed the invention of the steam locomotive, the attitude of the American people toward railroads was liberal and generous. Between 1840 and 1870, it was not uncommon for the States or the general Government to make handsome donations of land for the encouragement of new railroads.

In recent years, it has become fashionable to denounce this former policy of land grants, and to argue that the railroads received far more than they ever gave. We need not now enter into the merits of this criticism, although the case for the roads is very strong. It is sufficient to say that, if it was a mistake to donate any portion of the public domain in a new and unsettled country, for the purpose of building railroads which were to become great public highways, then assuredly it is doubly questionable whether the Government is justified at this present time in spending such large sums of the taxpayers' money in so many sorts of waterway improvements. No benefit, save an indirect one, can possibly result—and as to even that there is much room for doubt in many cases. The argument of indirect benefit is precisely the same sort of reasoning as was formerly used in justification of the land grants. What was claimed was that so great an indirect benefit would accrue to the country at large from the building of the railroads that were to receive the land grants, that the public would, in the end, receive back much more than the value of the land they were giving away. In the light of history, there is much to make it probable that this argument was well founded, and that the results have abundantly justified the land grants.

But all that is past and over. No one is giving away public land to any railroad. It is now more than forty years since any considerable gift of the kind was made. Far from taking any such course, the Government has reecntly tried to recover back from one of the continental roads many thousands of acres which it originally granted.

In place of the old policy of encouragement, there have come burdens and handicaps. These take the following forms:

First.—*Rate Reductions.*—These have come from both Federal and State commissions. Their number and extent is very large, and it is impossible to tell in figures just how great a depletion of railroad revenue has been thus effected. A single unfavorable decision may mean the loss of many hundreds of thousands of dollars. But the roads may not raise their rates without a permission which is almost impossible to secure.

Second.—*Increase in Taxation.*—This has been simply astounding, and out of all proportion to any possible increase in the real value and earning power of the properties. Railway taxes have advanced from $57,849,000 in 1903 to $129,052,922 in 1913. No other class of property has suffered such an immense increase in the weight of its burden of contribution to the expenses of government.

Third.—*Expenses Arising from Government Supervision.*—These are very numerous. But it will be enough to name only three.

(a) Printing of all sorts made necessary in order to comply with the requirements of State and Federal commissions. The printing and filing of tariffs, filling out of forms and answering of questions put by Government agencies has now become very expensive. For instance, for the year 1913, the St. Paul Road spent over $267,000 for stationery and printing; the Reading's bill was over $189,000.

We do not mean that the whole of these large sums was made necessary by Governmental action. Of course, that was not the case; but nevertheless a very large outlay is now absolutely necessary in order to meet the many exacting demands of the Government and its agencies.

(b) *Abolition of Grade Crossings.*—This sort of work is rapidly proceeding in all parts of the country, and is urged on by a multitude of State laws or by order of the State commissions. Desirable as it is, it can not be accomplished all at once. When it is realized that the average cost of abolishing a single crossing is $50,000, and that not infrequently it is much more, it is easy to form some idea of the burden the roads are now shouldering to meet the public demand on this point. Sometimes the expense is shared by the State, county or town, and sometimes not. In any event, it is very heavy.

(c) *Full Crew Laws.*—On this point, some of the States have directly interfered to render the business of moving freight more expensive than it was previously. This interference is the more exasperating because it has been, in many cases, wholly unwise and uncalled for; and is directly opposed to every principle of sound economy and scientific management.

Moreover, the railroads not only do not receive liberal compensation for their work in carrying parcel post matter, but have had the utmost difficulty in persuading the Government to give them anything like adequate remuneration. Unlike the steamships, they have had no encouragement whatever along this line.

The result of this repressive policy is now being made plain to every one. A point has at length been reached where the railroads cannot go forward relying on their reserve strength. They must have more freedom and new resources, if they are to do their part in the Nation's struggle for success.

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and reflect upon these widely [illegible]
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assist one kind of transportation, while taking such pains to thwart and embarrass the other. Do not both form parts of one great system? Is it not for the common welfare that both should flourish abundantly? Does not the maintenance of America's commercial supremacy rest upon them both?

There can be but one answer to these questions. It is as essential that we have swift and economical transit of freight by land as by water. The United States is, approximately, 1,600 miles long by 2,800 miles broad. This immense area forms one of the greatest agricultural, mining and manufacturing centres on the face of the globe. Great as it is, its development is still very partial and incomplete. In the South alone, it is doubtful whether half of the soil is under cultivation, while a mere fraction of the water power is put to service. Even in the older sections, there is an advance in population, silently going on every year, which gives evidence of how much room we still have for expansion, both East and West. For instance, take New England. It is common to speak of it carelessly as a stationary or even decadent part of the United States. Nothing could be more erroneous. In the decade from 1900 to 1910 little Rhode Island, with its 1,250 square miles, actually increased in population at the rate of twenty-six per cent.

In the same decade, Massachusetts increased twenty per cent, against Ohio's fourteen per cent. But great as has been the increase in population, it is moderate compared with tonnage and production. In almost the same period already mentioned (1901-1911) the tonnage of the Pittsburgh district alone grew from 64,125,000 to 152,000,000 tons. Other sections would show figures nearly as impressive. The South is mining almost twice as much coal to-day as the whole country mined in 1860. She has $700,000,000 more capital invested in manufacturing than the whole United States had in 1880. Everywhere the country's growth has been immense.

In the face of such an expansion and development, is it not of first importance that we be able to move our goods at the very lowest possible charge? The cost of transportation is a part of the cost of every commodity we buy. More surely than any customs duty does the price of transportation enter into the ultimate cost of every finished product. The Industrial Commission found that it cost the American farmers more to merely move their produce to market or to the nearest railroad station than the entire operating expenses of the whole railroad system of the United States for the year 1898. Think, for a moment, what this means. The average haul from the farm to the nearest shipping station was, so the Commission found, twelve miles over country roads. The cost of carrying the farm produce of the [illegible] country this short distance was $3 per
[illegible] a total of $900,000,000 for truck-
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roads will prove as vitally important as our merchant marine or our inland river steamboats and canal barges, and probably much more so. It is necessary that transportation by land be as swift, as adequate, as cheap and as reliable, as transportation by water. The railroads must bear the brunt of the work of collecting and moving goods from the interior to the seaboard and vice versa. The utmost extension of navigation on our rivers and canals, even if developed on the grandest and most sweeping plans now dreamed of by ardent members of waterways conventions, can never do away with the need for cheap railway transportation. The railroads can go everywhere and connect with everything. The waterway is possible only along the line of a limited number of routes. Its first costs of construction are often prohibitively onerous; its maintenance is very heavy; and its period of open navigation is restricted by cold and frost. Moreover, the waterway is now generally found seeking government aid or subsidy. The railroad simply asks to be let alone. It can live and prosper, if it can receive treatment that is half way fair. Is it not for the best interests of the American people to see that they have it? As wisely observed by President Wilson in his letter of September 10th to Chairman Trumbull, of the Chesapeake and Ohio Railroad, the "imperative need that railway credits be sustained, and the railroads helped in every possible way, whether by private co-operative effort, or by the action, wherever feasible, of governmental agencies" is *"very real."* The Nation seems determined to drive two horses in its business team—railways and waterways. If they are to pull evenly on the traces, we must treat each horse fairly. We must not feed one on oats, and the other on wire grass, and then expect each to draw his share of the load.

Strangling a Vast Industry

NOTE: The following paragraphs are from an address delivered by Ivy L. Lee, Executive Assistant of the Pennsylvania Railroad on November 20th, before the Young Men's Club of New Brunswick, N. J.

THE railroads in this country are caught in a vise which is being screwed tighter and tighter. Railroads do not oppose proper regulation, but is it not time to inquire whether regulation is not gradually becoming strangulation? Many are the signs now that the grip of cumulative regulation is slowly but surely squeezing out the life-blood of what President Wilson has called "the one common interest of our whole industrial life"; that it is scotching initiative and enterprise; and that it is undermining the ability of the railroads to provide for future public needs.

In our treatment as a people of the railroad question, we are obeying literally the scriptural injunction, "Take no thought for the morrow." "The railroad is here," we reason. "It cannot run away; let us get all we can out of it now, because—may be, its stock is watered!"

Mr. Prouty said before the National Association of Railway Commissioners in Washington on Wednesday: "Grave doubts exist as to whether rates must not be generally increased." And then he added, "The question cannot be satisfactorily answered until there is a national valuation of these properties." And Mr. Prouty himself predicted that this valuation would not be arrived at until 1919.

Regulation of railroads—so eminently desirable, when proper and not merely political—was originally to prevent discrimination and oppression. In no respect is anything else intended now, but the cumulative effect of laws and commission activities is that this device of statesmanship is being converted into an instrument of torture. In what manner that is true may be realized from the following:

Many States insist upon approving the terms of security issues.

New Jersey insists that grade crossings shall be removed at the sole expense of the railroad. At the meeting of the National Association of Railway Commissioners in Washington on Thursday, Commissioner Hall, of Nebraska, is reported to have urged that a "concerted effort should be made by all commissioners in all States that grade crossings should be eliminated at no matter what cost to the railroads." To remove all the grade crossings in the United States would probably cost $5,000,000,000,—one third of the present total investment in our railroads.

Commissions may order improved stations and the installation of signals; they may tell you where you must and when you cannot stop a passenger train.

They pass upon the quality of the locomotive boiler; they prescribe the character of headlight; they stipulate the kind of ash-pan; and the State of Indiana has now decreed that an automatic door be used on the locomotive firebox.

The law sets forth where the ladders, bars and other safety devices shall be placed on freight cars.

Commissions decree whether on mountain grades you shall use hand brakes, holding the air brakes in reserve, or air brakes, holding the hand brakes in reserve.

Federal laws stipulate the number of hours men shall work; States tell you how often you must pay your men, and many State laws fix the number of men in a train crew.

The process of manufacture of steel rails and the kind of ties used, are still matters for which railroad officers are responsible, but at the meeting in Washington an Interstate Commerce Commissioner called attention, as to an omission requiring repair, to the fact that "railway *material* is in general notable for its exemption from all supervision of any kind, State or Federal."

There is pending in Congress a law limiting the number of freight cars which may be hauled with one locomotive. At the meeting of Commissioners in Washington, a committee recommended that the Interstate Commerce Commission be given full authority to prescribe "the character of equipment to be used in interstate commerce, also authority to prescribe the manner of using or hauling same."

And the most amazing feature of this whole process is that actual experiences in the successful conduct of railroad affairs apparently disqualifies a man from appointment to a railroad commission.

In 1913, nearly 1,400 laws regulating railroads were introduced in 42 State legislatures. In 1914, only 14 legislatures were in session; but 236 new railway bills were proposed. Of these, 112 provided for some mandatory concessions to employes.

Arbitration commissions establish the rates of wages which shall be paid to employes, but assume no responsibility for obtaining the money with which to pay them.

Local authorities assess railway taxes, but these authorities have no power to help the railroads assess charges out of which to pay these taxes. On the Pennsylvania Railroad in the past fourteen years total wage payments increased 160 per cent and taxes increased over 200 per cent.

Perhaps expenditure for all these purposes is desirable, but it is certain that it cannot be made unless the railroads receive higher charges for the services they render—and the railroad company is concerned only that returns as a whole shall be adequate.

Nevertheless, a non-political Congressional committee reports that the railroads are underpaid for carrying the mails; but Congress takes no steps to provide the additional money.

Many States arbitrarily limit both freight and passenger rates. But even where that is not done, higher rates can only be obtained with the sanction of railway commissions.

Thus hemmed in between Scylla and Charybdis, the railroads have run aground on a long-charted and well known rock, known as the arithmetic table. In concrete form this is how the danger has manifested itself:

During the four years from June 30, 1910, to June 30, 1914, the thirty-five railroad systems east of the Misssissippi and north of the Ohio River expended for improvements nearly $900,000,000. Yet, such was the increased expense of handling business that in the fiscal year 1914 these railroads earned net operating income less by $90,000,000 than in 1910, before that cash investment had been made.

Must it not be apparent that had investors in the past realized the treatment they were to receive, they would not have provided the money for the building and development of our railroads?

And as the money for future railroad development must be supplied by private capital, is it not time that we took some thought for the morrow?

The Personal Injury Problem

BY GEORGE BRADSHAW, SAFETY ENGINEER, HIGHLAND, N. Y.

NOTE: The following paragraphs are taken from an address delivered by Mr. Bradshaw before the November meeting of the Western Railway Club. Mr. Bradshaw is an expert in his line and his address constitutes one of the most comprehensive brief statements of the various elements which enter into the railway safety movement, that has yet been published.

THE necessity for educating public sentiment is shown in the number of trespassers killed on railroads. More than 50 per cent of the entire number of persons killed on railroads in the two countries are trespassers. Sixteen people are killed in this way for every day in the year. This is simply wholesale slaughter and slaughter, too, from a risk which it is unnecessary to incur. While there are laws in Canada and some of the States prohibiting trespassing on railroads, no one pays any attention to them. There seems to be an impression abroad that hoboes and tramps constitute the trespassers killed on railroads; but the truth is that perhaps 80 per cent of such persons are useful citizens with fixed homes, laboring men walking along tracks or riding cars to and from their work, business men and, in fact, the public generally using railroad tracks as a convenient pathway, persons picking up coal in yards and children "flipping" cars. In other words, the railroad trespasser is the average citizen. The real sufferers are the dependent families of the victims; but the publc also suffes, first, in being deprived of the services of those killed and maimed and, secondly, in the increased burden of caring for those who are thereby made destitute and helpless.

The railroads are powerless to control this situation. It will continue till public sentiment puts a stop to it. Some of the roads, among which the Grand Trunk and the Grand Trunk Pacific are prominent, are endeavoring to educate the public to observe safe standards of conduct when about railroads and to discontinue the practice of trespassing. With this purpose in view they have safety precautions printed in their public timetables and posted in stations and other public places, occasionally articles in the press, and often hold safety meetings to which the public is invited. We are now arranging to start a campaign of safety in the schools by giving to every boy and girl one of the "Safety Buttons" you see on exhibit at this meeting and by having their attention called to the great danger of walking on railroad tracks and playing on or about cars.

It is gratifying to note that since the railroads started their vigorous campaign for greater safety, commercial industries, public service corporations and cities and towns from one end of the country to the other have fallen into line with the result that more is to-day being said and written —and *done* for the prevention of injuries than ever before. But we have really only begun. What is needed both in Canada and the United States—for conditions are identical in the two countries—is a department of government, or perhaps a bureau in some existing department, for the purpose of interesting and educating the public in matters pertaining to safety, not by issuing volumes of statistics and long technical reports; but by systematic instruction in schools, readable topics in the public press, notices posted along highways, moving pictures and lectures.

Let us now consider this problem in its relation to passengers. The one purpose of railroads is to transport persons and property, and their first duty is to conduct such transportation with the highest reasonable degree of safety to their patrons. So far as the safety of passengers is concerned there is really no problem, except, as already indicated, the problem of educating people to a better observance of safe conduct in their own actions over which the roads have no control. The record shows that there has never been a mechanical device of determined merit invented nor a method of operation of known effectiveness proposed that would reasonably insure greater safety to the traveling public that the leading railroads of our countries have not adopted as promptly as consistent with a thorough determination of merit and that the other roads—the smaller and weaker ones—have not adopted as fast as their ability permitted them to do so. Until recently we heard a great deal about automatic train stops. We don't hear so much now, because the American Railway Association, after a careful consideration of the subject, expressed an opinion as to what such a device should and should not do under various conditions in order to be reliable and effective; and one railway system offered a reward of $10,000 (which has not yet been won) to the person who would construct an automatic train stop to meet certain specified and necessary tests. One leading road has already installed the wireless telephone on its trains. If it proves serviceable, other roads will soon follow the example and in a reasonable time such device will be a regular part of the equipment of every road that can afford it. Four years ago the safety movement was developed and having proved effective, it has now been introduced on more than half the mileage of the two countries. And with only a very small percentage of exceptions, these devices and methods have been introduced voluntarily and not as a result of compulsory legislation.

As a consequence of this record, travel on railroad trains had become not only safe, but safe to a most remarkable degree. Mark Twain once said that it is safer to travel than to stay at home because so many more people die in their own beds than on trains. And it is literally true that "it is safer to travel than to stay at home." Insurance companies prove this to be so, because one can secure for the same premium double the amount of indemnity against death from train accident as from accident in an ordinary occupation or from accident even in one's own home.

I am not seeking to justify preventable wrecks which we all know do occur now and then and I have something to say about that particular phase of the subject later. But let those who may be inclined to pass harsh judgment upon railroads for these unfortunate occurrences first consider upon what a multitude of elements, conditions and combinations the safety of every train depends. First, there is the human element. A hundred, perhaps a thousand, men with individual duties requiring performance in a particular manner, at a particular time and place, separated by miles, yet all working together. It's so easy to make a mistake, even when one is trying to do his best—to misunderstand, to forget, to neglect some little detail, to use poor judgment—and yet a single error on the part of one man—just one in a hundred, or one in a thousand—may result in a train accident. Now, multiply your own personal liability to error by that of 100 or 1,000 and that by 60 by 24 and by 365. Then, there is the physical element. Ties, rails, bridges, embankments, grades and curves. Millions of bolts, bars, beams, and braces, links, levers, staples and spikes, a flaw in even one of which may possibly cause a wreck And yet in spite of all these circumstances, last year 209 companies operating arpproximately 121,000 miles of road, carried in round numbers 410,000,000 people—more than four times the combined population of the two countries—*without killing a single one in a train accident.*

Coming now to employes. Of the 205,000 persons injured on the roads of the two countries last year, 174,000, or 85 per cent, were employes. This is within a few points of the ratio from year to year. It is evident, therefore, that here is the real personal injury problem with the solution of which the Safety Movement on railroads is chiefly concerned.

An exhaustive analysis of thousands of cases of injury occurring from year to year over an extensive mileage, under all possible conditions and to all classes of employes has shown, first, that from 60 to 70 per cent of such cases are preventable and, secondly, that of those which are preventable, 80 per cent of them are due, not to improper or inadequate physical conditions or appliances, but to the employe's lack of knowledge of safe methods or to his indifference to the use of such methods. This may not be pleasing information to employes, but it is absolutely true. They are by no means chargeable with entire responsibility for its being true. Men are no better than they are educated and trained to be.

We have been taking it for granted that employes should as a matter of course know the safe and unsafe ways of doing their work. We have assumed that they know it to be dangerous to go between moving cars, to kick a drawbar to make coupling, to stand between apron of coal chute and cab when taking coal, to strike tempered steel with a metal object, to use "mushroomed" chisel or hammer, to throw boards about with points of nails projecting upward, to leave a baggage truck at edge of station platform, to use a track jack between the rails of main track and scores of other apparently simple things. Not only have we assumed that employes know the safe and the unsafe methods in performing their routine work, but we have also assumed that, without any special instruction on this subject, they would of their own accord take the safe course. The best proof that these assumptions are not well founded is the fact that employes are continually getting injured and killed doing things in an unsafe manner which they could just as well do in a safe manner. An engineer had some fingers blown off while screwing down the cap of grease cup on side rod due to explosion of fusee powder which he had put in to cool the cup. A storehouse employe used a lighted torch to locate a leak in a gasoline tank. He located the leak all right, but there was afterwards difficulty in locating the employe. A trackman, finding a torpedo, held it on the rail and struck it with his pick to find out what it would do—and he found out. Only a few days ago a sectionman—an English-speaking person considerably above the average in intelligence—was burned to death in attempting to start a fire with kerosene. While, of course, these examples are somewhat out of the ordinary, cases of a more routine and less impressive nature, yet due to the one cause of ignorance of safe methods, are occurring by the hundreds every day.

It is believed that there is but one way to prevent injuries from this source and that is to educate employes in the safe methods of doing their work. This is one of the purposes of the Safety

Movement and I will now ask your attention to a short illustrated talk on "Safe and Unsafe Methods for Railroadmen" which will give you an idea of how we are going about this matter.

(This part of the address was followed by a series of fifty stereopticon views showing unsafe and safe practices and conditions with explanation and comment.)

The most important and the least considered factor in railroad operation is the human element. This element is responsible for four times the number of preventable injuries and deaths and four times the amount of avoidable damage to property as all other elements combined. Yet it receives not one fourth nor one fifth nor even one tenth of the attention given to other elements. We spend immense sums in selecting, grading and testing materials and when we have built the best track and turned out the best engines and cars that money can produce, we depend, in selecting the men who are to operate this perfect equipment, upon the broad experience, the ripened judgment and the profound knowledge of a clerk in the superintendent's or trainmaster's office who, with the exception of the doctor making the physical examination, is often the only person connected with the road having anything to do with the applicant till he has been set to work. It's all right and proper to educate employes in the safe methods of doing their work, in the manner which I have indicated, but we have not yet gone at this proposition in the most logical and effective way. What we should do is to use more care in selecting the employes to be trained. There is no industry which is in a better position to demand and secure a high type of employe than the railroads, because, in the first place, there is a certain fascination about railroad work which appeals to young men and because the pay, especially in train service, is exceptionally good and the prospects for promotion are encouraging. Yet most railroads fail to avail themselves of these favorable opportunities. We often hear it said when business is particularly heavy that we "have to take anything we can get." That's true under present methods of employment, but the railroads are entirely responsible for its being true. The cleanest and most capable young man in the country may apply for a job braking or firing and if we don't happen to need him at the time, he gets little consideration, often only scant courtesy. He goes somewhere else and gets employment and then when business picks up and we have to have men, we have no waiting list—we don't even bother to take the name and address of such men,—and that's the time we "have to take anything we can get."

While the great body of railroad employes will compare favorably with other classes of men, yet it is true that we have in our ranks too many who belong to the "anything we can get" class. To expect the Safety Movement to make safe men out of some of the human material engaged under our present methods of employment is about as reasonable as it would be to buy rotten ties and expect to make them serviceable by some kind of treating process.

I believe we should insist upon an educational qualification, at least equal to that of the eighth grade, for all employes entering train, yard, station or telegraph service. When an applicant has satisfied the educational and physical requirements, he should be subjected to a most rigid character investigation by some officer assigned particularly to this work to whom all applications, in these branches of the service, should be referred and who would be able to keep a list of eligible men to be drawn upon as needed.

The great importance of the selection and training of men is indicated by the report of the Interstate Commerce Commission for the year ending June 30, 1913, in which it is said:

"The Commission again is compelled to note the exceedingly large proportion of train accidents due to dereliction of duty on the part of employes. Fifty-six of the accidents investigated, during the year, or nearly 74 per cent of the whole number, were directly caused by mistakes of employes. These mistakes were of the same nature as those noted by the Commission in its last annual report, namely, disregard of fixed signals; improper flagging; failure to obey train orders; occupying main track on time of superior train; giving lap order or using wrong form of order; excessive speed; failure to identify train that was met; leaving switch open in face of approaching train."

We have heard and talked so much about safety devices that we have largely overlooked the human device. We string our tracks with automatic signals which can't give an unsafe indication once in ten thousand times. Yet let an engineer through inattention, run one of these signals and cause a serious train accident and the newspapers, politicians and the public begin to clamor for more safety devices. They want flash lights in the cab, audible signals added to the visible and automatic train stops. As has been said, there would be just as much sense in equipping automobiles with fenders to prevent reckless drivers from striking people.

The Interstate Commerce Commission contends that there is need for more official supervision directed specifically to matters of safety. Perhaps there is some foundation for this position as conditions now exist. But the ultimate solution of the problem depends not upon more official supervision, but upon more careful selection and more thorough training of employes, together with a more rational and certain method of administering discipline whereby those who wilfully violate safety rules and instructions will be removed—*and kept removed* from the service before, instead of after, they have injured or killed somebody.

It should not be supposed from what has been said that the Safety Movement is simply a "please be good" campaign to be conducted by distributing literature and delivering lectures. If it went no further than that, not a great deal of good would be done. The brass band, speechmaking, notice writing, sign painting, button wearing propaganda, with nothing to go with it and back it up, is like the turkey gobbler,—"hell on dress parade, but not worth a damn in a fight."

There should be on every road of considerable consequence a competent man in charge of safety matters to which he should give his entire time and attention and be responsible solely to the chief operating officer. Here is where some roads have made a mistake. They have started this work with a whoop and a hurrah and then turned it loose to shift for itself or tacked it to some existing department to be conducted as a side issue. You can't get results that way: and unless a road is going to start this work right and push it vigorously, there is little to be gained in starting it at all.

The safety engineer should be a man whose knowledge of railroad affairs is such as to make his advice valuable to the heads of departments in matters relating to safety. He should understand the history, reason and proper application of all standard rules, especially those pertaining to train orders and the movement of trains. He should be thoroughly familiar with the application of standard rules and of safety regulations and devices in general on the leading roads. At frequent intervals, he should make inspection of shops, roundhouses, yards and terminals and occasionally an inspection of the entire line. He should merit the confidence of employes and spend much time discussing matters of safety with them and instructing them in the safe methods of doing their work. He should be able to detect unsafe methods and conditions and be prepared to show how they can be made safer without unnecessary interference with operation.

Perhaps it may be said that the officers in immediate charge should note and correct unsafe practices and conditions. They do make correction to a considerable extent; but they can't carry this work far enough. Their best thought and energy are given to volume of output for the simple reason that there is where the strongest pressure is brought to bear upon them. As a general rule they do the best they can under the circumstances; but this is the day of the specialist and the safety engineer is a specialist.

Let me now refer to an objection sometimes urged against the advisability of creating a separate branch of the service in the interest of safety, namely, that it interferes with departmental organization. The best answer to this objection is that it does not interfere. Let those who claim that it does, investigate the working of the plan on the leading systems of our two countries. Broad gauge railroad men—and most of them belong to that class—work on the principle that the interests of the road and not those of their departments are of paramount importance. They understand that an impartial and competent person looking at matters from an independent point of view may see many things which would escape their attention. Men of this caliber welcome the assistance of the safety engineer because they know that before he can possibly make a favorable record for himself, he must first help them to make a favorable record.

The Movement has been in effect on the Grand Trunk Railway for about fourteen months. Comparing months since the work was started with corresponding months before (the volume of traffic being about the same in each case) shows a decrease of 11.5 per cent in the number of employes injured and a decrease of 50 per cent in the number of killed. There has also been a most noticeable decrease in the number of injuries sustained by patrons and travelers on highways.

The indirect results attributable to safety work have also been most gratifying. For example, the superintendent of one of the large terminals advises that since the work was started there has been a decrease of about 50 per cent in the damage to equipment from rough handling. In the terminals referred to, during last January and February, 46,000 cars were handled without one dollar's damage to even a drawbar.

The following statements show results of the Safety Movement on some of the important lines.

Chicago and North-Western.

During the four years ending June 30, 1914, compared with the four years on same basis ending June 30, 1910, there was a decrease of 32 per cent in employes killed and a decrease of 26.5 per cent in employes injured; a decrease of 21.8 per cent in passengers injured; a decrease of 18.7 per cent in outsiders killed and a decrease of 6.6 per cent in outsiders injured.

Northern Pacific Railway.

A decrease of 73 per cent in the number of employes killed and a decrease of 17 per cent in the number of employes injured.

During the year ending June 30, 1914, as compared with the previous fiscal year, there was a net saving in expenditure on account of personal injuries of $40,916.17.

Delaware, Lackawanna and Western.

Employes injured first six months of—	
1911	137
1912	121
1913	109
1914	99

Employes killed first six months of—	
1911	34
1912	21
1913	19
1914	7

Canadian Government Railways.

A decrease of 22 per cent in the number of employes injured and a decrease of 60 per cent in the number of employes killed.

St. Louis and San Francisco.

During the three years immediately following the introduction of the Safety Movement, as compared with the three years immediately before it was introduced, there has been a reduction in casualties to all classes of persons of 23 per cent.

Examples of this kind could be greatly extended. The Safety Movement is no longer an experiment and asks now to be judged, not by promises, but by results.

The Parcel Post and Its Effect on Railway Revenues

On November 20th, Mr. J. V. Bradley, general supervisor of mail traffic of the Pennsylvania Railroad, addressed the members of the New York Railroad Club on the above subject. After reviewing the history of the discussion which terminated in the establishment of the parcel post and the important changes made by postal regulations after it became effective, Mr. Bradley refers to their effect upon express revenues in 1914 in the following manner:

"The statistics are not yet available to show the gross revenues of all express companies for the year ending June 30, 1914, and we are therefore, obliged to confine our study to the returns of the Adams, the American and the Wells-Fargo companies. These combined, represent nearly 70 per cent of the revenues and 65 per cent of the mileage of all express companies. For comparison, the figures are given since 1909:

Year	Revenue	Increase	Per cent
1909	$85,221,247	....	.....
1910	94,458,068	$9,236,821	12.01
1911	99,705,808	5,247,740	4.44
1912	110,372,802	10,666,994	10.69
1913	117,965,952	7,593,150	6.87
1914	110,579,322	D7,386,630	D6.26

"If the revenues of these three companies for 1914 had shown the same growth as between 1912-1913, they would have been $125,000,000.

"Part of the deficit is due to the reduced rates ordered by the Interstate Commerce Commission to take effect February 1, 1914, but how much? One prediction was that the Interstate Commerce Commission's order would result in a reduction of 22 per cent. As the reduced rates were in effect only five months of the year, this would be equivalent to 9 per cent, or about $11,000,000. This amount subtracted from $125,000,000, leaves $114,000,000. Comparing this with the actual earnings of about $110,000,000, leaves $4,000,000 to represent the maximum amount that could be regarded as due to parcel post competition Another prediction was that the new Interstate Commerce Commission rates would reduce the express companies' revenues by 17 per cent instead of 22 per cent. Applying our calculation in the same way, we would get as a result that the loss in 1914 on this account was $8,750,000, leaving the maximum loss attributable to parcel post competition about $6,000,000.

"While our attention is concentrated upon the two positive causes which would indicate probable loss of revenue in 1914, namely, the Interstate Commerce Commission order and the parcel post traffic, we necessarily assume equality in other conditions entirely outside of these two causes which might have a serious effect upon the revenue. For instance, business depression, which has caused a general falling off in railway revenues, would no doubt have a similar tendency in connection with express companies' revenues. It would, therefore, be rash to assume that the loss of from $4,000,000 to $6,000,000 in the business of these three companies is chargeable to parcel post competition, but if we take the lower of these two amounts, $4,000,000, as possibly indicating the loss to these three companies, we could logically assume that the loss to all of the express companies in the country from the parcel post competition during the year ended June 30, 1914, was about $6,000,000, or say about 3 or 4 per cent.

"In connection with our estimate that all the express companies together lost $6,000,000 by parcel post competition during the year ended June 30, 1914, we might venture another guess as to the number of pieces lost. The Interstate Commerce Commission's table of express statistics gave an average revenue per piece of 50 cents, but this is based upon all weights and distances. The active competition of the parcel post is from 1 to 11 pounds, and from the first to the third zone The four-pound package would be the typical average, for which the express rate to the third zone would be about 25 cents. This would make the loss in pieces about 24,000,000 for the fiscal year 1914. In other words, the loss of the express companies was seemingly about five or six per cent in pieces and about three or four per cent in revenue. If the express companies lost $6,000,000 in revenue, the railroad companies would lose approximately one half of this or, say, $3,000,000.

"The ton mileage of this mail in 1913 would, therefore, have been about 84,000,000. The Post Office Department reported to Congress as of April, 1913, a ton mileage for all mail of $510,000,000. The addition was, therefore, about 15 per cent in that year and even greater in 1914.

"The only action by Congress towards compensation was an allowance of 5 per cent increased pay to the railroads until the mails were weighed in regular course, but this weighing is only made once in four years The 5 per cent allowance amounted to $1,687,360, although the additional revenue received by the Post Office Department from the first year's new business was estimated at about $15,000,000.

"The railroads are now awaiting action by Congress on their petition for a remedy of this condition. They ask specifically for annual weighings instead of quadrennial weighings; for extra pay on account of the apartment railway post office cars they are obliged to provide and for relief from the messenger service between railroad depots and post offices which has been required of them for many years.

"As against these simple reforms, the Post Office Department has urged the enactment of a law to pay the railroads on the basis of car space as they might authorize it, and at rates per car mile considerably below the average car mile earnings of passenger train service. The railroads' representatives have opposed this proposal, both as regards the rates and the system and have explained to Congress the administration difficulties which make the plan impracticable as well as dangerous for both the Government and the railroads.

"We confidently hope that Congress will prefer to pass a few simple amendments in the existing law to perfect a system which has been in operation for about forty years, rather than to pass a new law on a totally different and experimental basis which would abandon the safeguard to both parties through the knowledge of the actual weight of mail transported at the very time when the Government is developing through the parcel post a system of transporting heavy merchandise in competition with the existing agencies owned and operated by its own citizens.

"To conclude the study of the effect of the parcel post upon the revenues of the railroads, it may be said:

"1. That so far as the railroad revenues are reduced at the present time because of the reduction in the revenues of the express companies, this is more due to the new rates prescribed by the Interstate Commerce Commission than to the competition of the parcel post.

"2. The parcel post, by the creation of a large amount of new business as well as by taking some business from the express companies has greatly increased the tonnage of the mail transported without any adequate provision for the payment thereof to the railroads that are performing the service. It is of great importance that such remedial action be taken promptly, not only because justice to the railroads requires it, but also that the Government may obtain information as to the full cost of performing the parcel post business. The knowledge of the full cost of transporting the parcel post business will save Congress from approving of parcel post rates which would result in a heavy increase in taxation, unless Congress in representing the people should deliberately decide to decree general taxation to pay for the performance of a public service, the benefits of which would only be slightly enjoyed by the ordinary citizen, but which might be largely monopolized by the mail order houses and other great business establishments."

The Handling of Snow and Care of Track in Winter

NOTE: The management of the Canadian Northern Railway recently offered a prize to the roadmasters of its lines in Quebec and Ontario for the best paper on "The Handling of Snow and Care of Track in Winter." The first prize was won by R. J. Monroe, roadmaster at Joliett, Que., whose paper is herewith presented:

IN dealing with this subject I will endeavor to put in a concise form the methods, which, in my opinion, should be employed in order to obtain the most economical, safe and efficient results. Trackmen's work in winter consists practically of but two units, the clearing or removal of snow and the maintaining of track.

The handling of snow in the Province of Quebec, due to its geographical location, is a difficult problem, requiring thorough organization and the co-operation of all those engaged in the operating department.

With the approach of winter a portion of the ballast should be removed from between the ties around all moveable parts of interlocking plants, switches, etc. This is essential in order to facilitate the removal of snow and ice from these parts during the winter. The ends of all crossing planks that remain intact during the winter should be tapered off, in order to minimize as much as possible the damage that would result from flangers catching them while in operation.

The roadmaster, after personally inspecting all snow plows and flangers assigned to him, and having them equipped and made ready for service in good season, should consult with the superintendent and arrange for the proper distribution and assignment of this equipment. An experienced and competent foreman, thoroughly familiar with the district to which he is assigned, should be placed in charge of each snow plow. He should also be familiar with adjoining districts, so as to be in a position to operate over same in case of emergency.

Each snow plow foreman should make several trips over the division every autumn, in order to become familiar with the location of sidings, interlocking plants, etc., which is essential in the successful operation of snow plows. He should also take particular notice of any changes that have been made since the previous winter, such as the installation of new side tracks, or the lengthening of old ones, etc.

At the beginning of the winter the track should be kept clear of snow as long as possible, by the operation of wing flangers on freight or mixed trains, thus avoiding the extra expense of running plow extras. As the season advances and the snow becomes heavy and cuttings get filled, necessitating the operation of snow plow extras, the roadmaster and supervisor of track must keep in touch with the superintendent and chief dispatcher, keeping them well posted as to the condition of the road, and arrange for plow extras when required, and in this respect it is imperative that snow plow extras be run promptly when ordered, and that the best available power be supplied for them. Experience has taught us that failure to promptly operate snow plows during heavy snow storms has resulted in serious blockades, with the ensuing result of congestion of traffic and extra expense all round.

On the return trip of snow plow extras from their operation over the division, or immediately after snow storms, plow extras should be used in winging out and widening the bad cuttings and for plowing out all passing tracks and other through sidings. The prompt and proper handling of snow in passing tracks and sidings, by the use of snow plows, reduces the cost of hand labor, and in addition permits the more prompt handling of traffic after each snow storm, as trains can meet without delay, and cars can be promptly set out or picked up from business tracks.

In heavy cuttings, as well as in certain places in the open country, snow very often accumulates from continual drifting, and in this respect section foremen must thoroughly familiarize themselves with their sections. It is important that they watch closely all such places and give timely advice to the train dispatcher's office, as well as to the roadmaster and supervisor of track, as soon as snow accumulates in such places, so that trains, especially heavy loaded freight trains, may not be permitted to run into such places and become stalled, thereby seriousely delaying traffic. They should keep the snow in all such cuttings well shoveled back, so that snow plows during snow storms may successfully operate through them with wings in full operation.

The handling of snow at the larger terminals forms a heavy item of the snow expense, and while no adequate means have been devised for doing this work, except by hand labor, still a great deal can be accomplished by the use of flangers. Foremen in charge of terminals must watch snow expenses very closely and not employ more men than is absolutely necessary. This is particularly so at the beginning of the winter, when the first falls can be handled with a small gang of men and with very little inconvenience to traffic, as the flange is generally clear of ice and hard snow and yard engines can operate with greater ease than later on in the season. Tracks and switches around locomotive houses, water tanks and shops demand very close attention on the part of section foremen. Ice quickly accumulates at such places and unless watched very closely, becomes a cause of derailments. Section foremen in charge of important terminals should keep in touch with the unemployed labor, so as to be in a position to secure extra men on short notice.

Shimming is another problem which trackmen have to contend with. The extent to which track heaves varies according to the nature of the soil in the subgrade, the amount of ballast underneath the track and the drainage. With a liberal supply of ballast shimming can be reduced to a minimum. It is my experience that the results obtained from shimming do not depend so much on the number of shims applied each day, as the applying of them in the most needed places. When track heaves badly the section foreman should select the worst spots on his section and do the necessary shimming promptly, in order to keep the track in a safe condition for the passage of trains. Some foremen, especially the inexperienced, find it rather difficult to select the worst places and very often spend valuable time and material doing unnecessary work. In order to avoid this the supervisor of track, when traveling over the division, should keep a sharp lookout for rough track and note the extremely bad places on each section and promptly advise the foremen, giving them the exact location of each spot. By doing this regularly all unnecessary shimming will be avoided and the track will show a marked improvement each day.

Spread track, except on sharp curves, is invariably caused by defective surface and line. When track shows signs of spreading, trackmen should at once set to work to remove the actual cause, instead of driving a few extra spikes and leaving the track in bad line and surface, with the result that the track will again spread from the same cause in a day or two.

When leaving for work in the morning the section foreman should always have in mind the places to be shimmed on that day and see that he has the necessary material with him.

When shims exceed half an inch in thickness spikes should be pulled and driven through them. When shims exceed 1½ inches, sufficient long spikes and braces must be used to ensure safety. When shims exceed 3 inches, long shims must be used and an occasional one spiked to the ties.

The most critical time is in midwinter, when snow storms are frequent and of long duration. At such times trackmen find it very difficult to do any shimming and track will continue to heave badly. Bad spots will develop that will become dangerous within a very short time if not attended to. Supervisors of track must watch this even more closely in such weather and keep a sharp lookout for such bad spots and insist on having them attended to at once.

As soon as the snow has disappeared from around the rail, section foremen should go over their section and spike all short kinks into line and shim up all spots which are liable to cause spreading.

We now arrive at the season when the frost will show, signs of coming out and shims will "show high." A great deal of rough track at this season can be attributed to two causes, the principal one is that of allowing shims to remain "high" for a certain length of time in order that they may be all taken out at one "pulling." The other is the lack of doing the needful shimming around frogs, crossings, etc., where the frost is retained a longer period. Some foremen neglect this important matter with the expectation that the frost will disappear in a day or two, when in many cases it remains for weeks. As soon as shims "show high" they should be reduced or removed, as the circumstances demand, and the material used elsewhere, such as around public crossings and frogs, as mentioned above.

Where track heaves badly, such as in cuttings, the section foreman should examine it frequently by walking over it and sounding the ties, as the frost is liable to drop out suddenly, leaving a serious defect which is not noticeable on the surface of the rail. Such track as this cannot be inspected properly on a hand car.

All switch ties should not be filled up to insure a uniform departure of the frost and to prevent them getting slack.

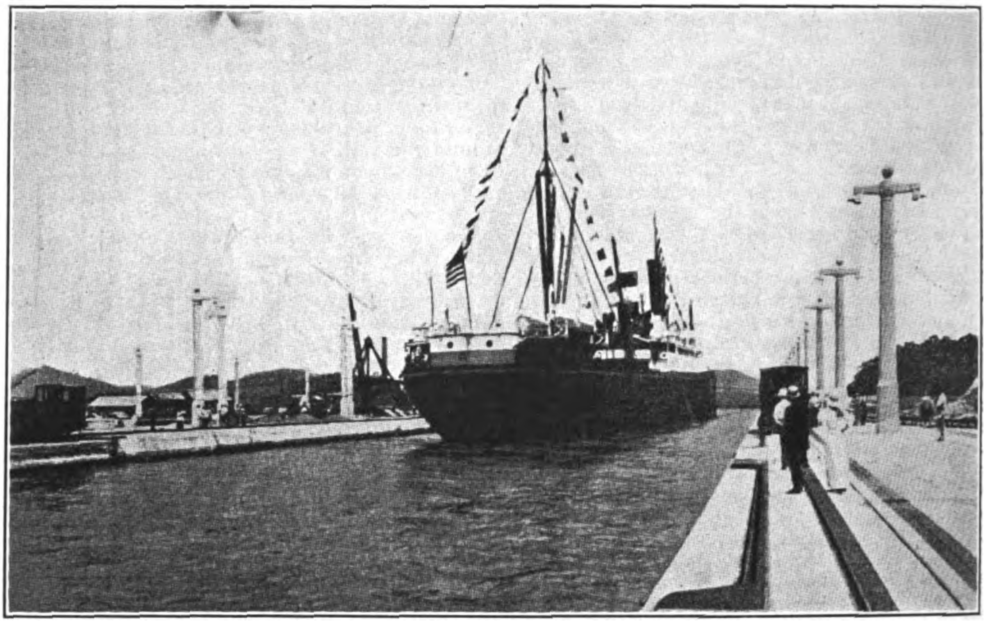
One of the most important matters is a daily patrol of the entire section by a competent trackman. This is especially so during stormy weather. It is his duty to keep a sharp lookout for a spread track, broken rails, etc. A very important matter and one that must not be lost sight of by foremen and supervisors of track, is the accumulation of ice in rock cuttings, side hills, around cliffs, or at any other points where the track is liable to be flooded during soft and rainy weather.

The Panama Canal and the Railroads

NOTE: The following article by John Maurice Clark, appears in the Panama Canal supplement of the *New York Commercial and Financial Chronicle* and is presented herewith by permission of the publishers.

AMONG the many questions raised by the opening of the Panama Canal, not the least interesting will be the effect of this great new waterway on the greater common carriers, the railways, to which it will appear in the two-fold guise of teammate and competitor. It will develop some new traffic in which the railways will have a share; it will take some of their present traffic away from them, and some traffic will be shifted from its present course, and will run in new channels. All this will bring gains to some carriers, possibly losses to others, while to most it will bring gain and loss commingled.

We expect an increase in our export trade to the west coast of South America and the Orient. Exports, moreover, must be paid for with imports. Now the greater part of the exports and imports must be carried by rail, some distance at least, and the profits on this business will be one of the benefits which the Panama Canal will bring to the railroads. For much of this commerce, New Orleans is the natural port, and, in proportion as New Orleans comes thus into its own, the railroads which serve that port must share in its prosperity. Not only in foreign trade does New Orleans expect great growth, but in trade to the Pacific Coast of the United States itself, diverting traffic from the overland routes. Thus the Illinois Central and the Louisville and Nashville may become competitors of the Union Pacific or even of the Great Northern. The strictly north and south lines are not, however, the only ones to share in this traffic. The Rock Island controls a route from Chicago to Galveston, and the Frisco system also includes a Gulf connection. Thus these western transcontinental



The First Large Freight Steamer Through the Panama Canal.

roads, which are exposed to the most direct losses from the competition of the canal route, have at least some small chance to participate in gains as well.

So much for the commerce of the Gulf ports. What of the transcontinental traffic and carriers? These roads are clearly liable to very definite losses from the opening of a great new waterway which must inevitably strengthen the competition for business from coast to coast—a waterway through which their own ships may not pass.

Aside from the general, normal growth of business, there will undoubtedly be some business which the canal itself will create. Indeed, there will be a sort of rough, natural compensation at work by which, the more traffic is taken from the roads, the more of other sorts of traffic will come in to them. The steamers cannot make serious inroads into the railways' business without a very considerable lowering of rates; a slight reduction will not do it. And if rates are lowered a great deal, the result will be more than a mere diversion of the existing traffic; it will mean a stimulus to industry and commerce which cannot fail to furnish some work for the well nigh universal common carrier, the railroad.

But the growth of new business is problematical and takes time, and in the meanwhile the canal route, will be taking away from the railroads some of the business they already have, just at the time when the revival of the long-and-short haul clause seems threatening to deprive them of their customary freedom in meeting the inroads of competition. At present the boat lines carry something over one tenth of the transcontinental freight tonnage. However, the so-called "transcontinental" traffic includes shipments from as far west as the Mississippi River, and goods destined to inland points throughout the Pacific slope. In fact, only about one ton in five of the westbound transcontinental traffic comes from farther east than Buffalo and Pittsburgh. The Middle West has become dominant over the Atlantic seaboard in the commerce of the Pacific slope.

Now, obviously, it is the traffic from seaport to seaport that is most exposed to water competition, and half of this traffic the boat lines have already taken from the railroads.

In one sense, it would seem as if the railroads had already suffered the greatest damange to which they stand exposed. And yet, even so, there has been no absolute shrinkage of traffic by rail. The increase in the water-borne tonnage has come out of the normal growth of the total volume of business. The question, to which the future holds the answer, is: will the added advantage from the use of the canal be enough to take from the railroads the balance of the coast-to-coast freight, and make serious inroads on the business moving from the interior cities?

Compared to the present rail-and-water routes across the isthmus at Panama and at Tehuantepec, the canal route will, of course, be faster and substantially cheaper. The steamship lines will save an amount which may be roughly estimated not to exceed 13 cents per 100 pounds of freight, or something like one tenth of an average transcontinental freight rate by rail.

This is on the supposition that the boats travel with full cargoes, but the indications are that they will probably find it quite difficult to secure an eastbound tonnage equal to the westbound. It is only the heavy eastward movement of Hawaiian sugar that keeps the tonnage fairly well balanced at the present time. If the freight passing through the canal has to pay expenses on a balance of empty cargo space, the economy of the Panama route will not be quite as great as it appears on paper.

It must be further taken into account that the freight rate is not the only consideration in competition between a railroad and a line of steamboats. The rates are now from 20 per cent to 60 per cent lower by water, and still the railroads keep nearly half of the coast-to-coast tonnage. Obviously, a great deal of the business is governed by other considerations than the mere freight rate. It hardly seems probable that another 10 per cent subtracted would be enough to overcome all these "other considerations" at one blow, and take all the remaining traffic away from the railroads, even if the roads did not meet the cut in rates.

One of the reasons why the railroads can charge more and still keep a large share of traffic is the fact that the trans-isthmian route demands so much handling en route. If a short rail haul is needed at each end, the goods must be loaded and unloaded at least ten times, into and out of three freight cars and two steamers, and all of this means a greater risk of injury to the goods calling for more expensive packing to protect them. With the Canal in use, this disadvantage would be cut approximately in half, though it would still remain a substantial handicap. In the matter of speed the new route will about equal the ordinary slow-freight service of the railways.

There are some things which the steamers can not wholly divert by any reduction in rates. California fruit, and all goods using the special fast freight service of the railroads, would probably continue to move largely as it does now, no matter what inducements the steamship lines might offer. The fruit growers' co-operative associations have enormously increased the value of their crops by following up the shipments on their way eastward, and diverting them by telegraphic orders to the most favorable market. This advantage they will probably not abandon, even if the other obstacles to the carriage of fruit by steamer through the tropics should be successfully overcome. There is doubtless other traffic which will still prefer the overland route, for one special reason or another. On the whole, then, with regard to the strictly coast-to-coast traffic, the situation would seem to be this: that the railroads will not lose all of it in any case; but that they carry less than half of it at present, and would probably come out of a defensive rate war with a still smaller percentage.

Will they lower their rates? If this strictly through traffic were a thing by itself, they would probably make a determined effort to retain it. But it is not a thing by itself. The whole eastern part of the country is given the same rates on transcontinental business, so that the railroads could not lower the New York rates without a similar loss of revenue on the vastly greater volume of shipments originating, or terminating, at inland points as far west as the Mississippi River. This would be a heavy price to pay to keep a small part of the traffic, already carried at far less than the normal margin of earnings. Indeed, this very fact may help to explain why the railroads have avoided rate wars in the immediate past, and have followed a "live and let live" policy toward the steamship lines connecting with the Tehuantepec and the Panama railways. The loss would have been greater than the prize was worth. Unless the steamers begin taking on so much traffic from far inland, as to make serious inroads on this, the main part of the railroads' transcontinental business, we need not expect to see a war of rates inaugurated.

For all of this traffic, especially for traffic which does not reach the seacoast at either end of its journey, the railroads will continue to have advantages that should be almost decisive. They will avoid two transfers, with all the delay and chance of injury involved. They can carry the goods more quickly and more safely than can the steamers with rail connections at the terminals. And when the traffic goes by sea, either the shipper or the steamship company must pay the railroads for their part of the roundabout haul, thus increasing the expense of the ocean route. At present, some shipments move by water from as far west as Buffalo and Pittsburgh, and from points a hundred to a hundred and fifty miles inland on the Pacific slope. The saving from the use of the canal may be equivalent, at a liberal estimate, to an extra haul of three hundred miles at the eastern end of the journey, or less than half as much in the Pacific Coast States, where rates are higher. How formidable this widening of the steamers' sphere of influence will prove, is a matter that can only be conjectured. The railroads may be consoled, especially the eastern lines, by the fact that even such traffic as they may lose is not wholly lost. They will merely have exchanged a long haul at a low margin of profit for shorter hauls at more satisfactory returns, mile for mile. If the general growth of traffic is as great as is expected, the result may be no loss at all, but rather an improvement in the character of the traffic and an increase in ton-mile revenues.

If the railroads are forced to fight for the middle western traffic, they may find themselves somewhat hampered because the present orders of the Interstate Commerce Commission place certain limits on the practice of charging lower rates to Pacific seaports than to intermediate points. This fact should prove to be an interesting incidental problem, but not, necessarily, a terrifying one, even though the Supreme Court has upheld the rulings of the Commission. The idea of these rulings is to grant exemption from the long-and-short haul clause and allow the railroads to discriminate in favor of their terminal cities, just so far as they are compelled by genuine water competition, but no farther. Now that the force of competition by sea is to be considerably increased, it is entirely possible that the details of the Commission's plan may need to be reconsidered and extensive changes made.

In particular, it seems unnatural that Galveston should be classed with Omaha as a place enjoying no water competition, and that New Orleans should be treated as enjoying no more effective water competition than Madison, Wisconsin. Rates from Galveston may not be higher to intermediate points than to the coast, and rates from New Orleans may be only 7 per cent higher, while from Boston, New York, Philadelphia and Baltimore, the intermediate rates may be 25 per cent higher, the through rates being forced down by water competition. At present, no regular steamship lines run from the Gulf ports to the isthmus, but with the opening of the canal we may expect to see genuine and active water competition at these points. Accordingly, we may expect that the Interstate Commerce Commission, following the principle of its first ruling, will grant more liberal dispensations from the long-and-short haul clause, especially to the railroads serving the Gulf ports, provided that these carriers show that they need the revenue which higher rates to intermediate points would furnish.

So far, we have been viewing the more immediate effects of the canal, and we have seen that there will be both gains and losses. Will things bear different aspect in the long run?

Will the railroads ever reach that happy state in which they will not care how much through freight is carried by the steamers? There is good reason for believing that the time will come when railroading will not be a business of "increasing returns" to anything like the same extent that it has been in the past, if at all, and when extra tonnage, carried extra long distances at extra low rates, will not be regarded as a valuable prize, but as a very doubtful asset.

For some roads, indeed, that time seems to have arrived already. To the Pennsylvania Railroad, for example, the regular growth of traffic means the outlay of enormous sums for increased plant to handle the added tonnage, over $64,000,000 having been spent thus in the last year alone. In recent years this company has built what is virtually a separate double-track railroad to handle freight alone and relieve the main line of congestion. The expenses, for various reasons, (not all connected with increased traffic) are growing actually faster than the income. Under such conditions, it is far from true that added traffic always pays, so long as it brings in anything above operating expenses. A road in this condition need not mourn if a competitor kindly relieves it of some of its least profiable business.

The condition of the lines east of Pittsburgh can, in itself, hardly have much bearing on the question at issue, for these lines are comparatively indifferent to canal competition in any case. But we are looking into the future, to a time when lines farther west will be approaching a similar condition. At present, it is the western roads, rather than their eastern connections which are chiefly responsible for the disregard of distance that characterizes our transcontinental freight rates.

When the plant was partly idle, more tonnage was a boon at almost any price. But as traffic becomes more dense, the motive to discriminate becomes weaker and weaker. Thus the western lines made low rates to fill their eastbound empty cars with lumber, with the final result that the policy was too successful. The cars were more than filled, and further shipments of lumber were chargeable with the cost of added rolling stock, and the haul of empty cars westward, as well. This is an extreme case, but typical.

The western roads have, of late, been spending many millions in enlarging the capacity of roadbed and rolling stock, while the moving of freight through Chicago, St. Louis, and other western cities is a great and growing problem, calling for huge capital expenditures. No traffic is self-supporting which does not contribute its full share toward the interest on these outlays. When congestion turns railroading into a business of diminishing returns, the traffic that was once eagerly sought for at extra low rates, may become an actual burden, to be borne grudgingly, and only out of consideration for the many interests that are always dependent on an established adjustment of charges.

Across the arid and mountainous stetches of the West the tonnage will hardly grow to this extent, and the officials in charge of these divisions may never cease to cast covetous eyes at the water-borne traffic. But as the rest of the country grows up to its transportation facilities, we may expect that the carriers in general will soon cease to lament the business the canal has taken away, while they will continue to enjoy the more attractive buisness which the many-sided growth of the country will bring with it.

Let us suppose that the canal has taken its place in our commercial system and our growing population and industry have adjusted themselves to it. The railroads will then, as now, be facing the problem of providing billions of capital to meet the transportation demands of our ever-growing country. What would they say then to a proposal to close the Panama waterway to all coastwise traffic, and throw upon them the responsibility of raising funds to provide facilities for a sudden increase of relatively low grade business? One can hardly imagine them actively advocating the passage of such a measure. On the contrary, if, in the year 1950, an earthquake should destroy the canal, it is quite possible that among those who would view the catastrophe with the most sincere grief would be the heads of the great railroad systems of the country.

The Mechanical Side of Railroading

NOTE: The following address was delivered on November 19th by William Schlafge, general mechanical superintendent of the Erie Railroad, before the Railroad Men's Improvement Society of New York City.

ABOUT one hundred years ago the progress of the world in all lines of effort brought about a condition where commerce, particularly inland commerce, had outgrown the known and tried means of transportation to such an extent, that an arrest of development was imminent, unless new and adequate methods could be devised to meet the changed conditions of the times.

Then both in the old world, and in the new, the channels of commercial carriage were the waterways, natural and artificial, and the highways. The latter varied from crude, primitive pathways, through the newer and sparsely settled regions, and of severely limited unit load capacity, to the scientifically constructed roads, of the older and more populous communities, which, designed with that end in view, were correspondingly more economical and efficient.

Steam was receiving recognition as a practical aid to navigation and the day when its perfected application would supplant sailing power, was in sight to wide awake observers. But on the land, domestic animals were still the main reliance as prime movers. It was in land carriage where the insufficiency of means was most keenly felt, and which called the loudest for relief. But in spite of the efforts of hopeful dreamers and hard working men of mechanical genius and of dauntless courage, to adapt steam to the purpose, the day seemed yet far distant when relief would come by that means. As usual history repeated itself, just as it does to-day, and about everybody scouted the idea as an impossibility and an idle dream.

But in every crisis, in every age, some commanding figure rises above his fellows and quietly, calmly takes the burden and meets the problem of the hour. This is remarked with such unfailing regularity throughout history that we have come to speak of the advent of such men as Providential.

Is there a new continent to be discovered? a Columbus appears. Are the liberties of a nation to be defended and preserved? a Prince of Orange or a Lincoln arises to guide its destinies. A Goethals is found to meet the supreme test of mighty constructive achievement and overcomes all obstacles, even the seemingly unconquerable forces of nature; and so, in the early part of the nineteenth century, the master mind of Stephenson harmonized and co-ordinated the diverse theories and accomplishments of his contemporary investigators, and gave to the world the steam locomotive as a practical agency of commerce. Nor does it detract from his just fame, to concede that another may have a better claim to be considered as the original inventor of the steam locomotive. It is fairly well settled that he made the earliest application, of known principles, which produced a workable, successful locomotive of commercial utility. A mere passive academic knowledge of principles, or of truth, is of no avail unless applied. It is application to useful ends that counts.

Thus we see that railroads had their beginning in the fruits of mechanical genius and, after the passing of the century, that separates these pioneer efforts in locomotive design and building from the worthy accomplishments of to-day, we may still say that the mechanical side of railroading has retained its absorbing interest and its original relative importance.

The history of the development and progress of railroading may be pictured graphically in many ways; but it may be doubted if that wonderful story can be told more vividly, more convincingly, more accurately than by contemplating the evolution of the locomotive from Stephenson's "Rocket" to the latest Pacific type or triplex compound or, indeed, by tracing the growth of carrying vehicles from a unit, scarcely larger than an ordinary road wagon, to the seventy-five-ton freight car.

If we are to analyze railroad operation it is obvious that we will find that each department has problems and troubles peculiar to itself. On the mechanical side the great problem, as to American railroads, is the care, inspection and maintenance of 2,500,000 freight cars, 56,000 passenger train cars and 66,000 locomotives representing an investment estimated at three billion three hundred and fifty million dollars and calling for an annual maintenance charge estimated at $450,000,000. It might be remarked, in passing, that the latter sum would more than provide each year for a work of peace equal to the Panama Canal; but it would only finance the European war for about ten days.

Were all the cars and locomotives of American railroads coupled together, over two thousand miles of track would be required to hold them. They would considerably more than fill solid the main line double tracks of the Erie Railroad, from New York to Chicago or, on a single track, they would reach from New York to Denver.

It is not possible, nor even desirable, perhaps, to go into the details of mechanical operation to show the magnitude of the work involved; but a faint conception of it can be had by recalling that approximately one billion passengers and over one billion tons of revenue freight are carried per annum on American railroads. Carrying units must be kept in condition to transport this great volume of business in safety, to conserve both life and property, and locomotives must be maintained in condition to move it. The extent of this work to some degree is indicated by citing, as an example, a few essential parts of a freight car which if in disrepair, may cause trouble ranging from an interruption of traffic, more or less serious, to derailment and loss of life or property.

Such parts are wheels, axles, journal bearings, brake beams, air hose and drawbars, of which there are twenty-eight items per car unit, or a total of seventy million important parts, on the entire freight equipment of the country, that must be watched every day to prevent disaster.

In addition to these principal parts, having to do with safe movement of the car itself, there are innumerable parts of lesser importance which, if defective, may endanger the safety of the car and many others such as defective roofs, sheathing, floors and doors, projecting bolts and nails, which may cause damage to property entrusted to transportation.

Aside from the multitude of things which self interest and ordinary prudence would cause the carriers to look out for, there are many duties of inspection and maintenance, imposed by the laws of the several States and of the United States, referred to collectively as safety appliance laws. These add to the burden and expense of mechanical operation. There are literally hundreds of parts on every car, a failure or absence of which, may cost the operating carrier a fine of one hundred dollars. There are a like number on every locomotive, which require the closest attention, to avoid trouble leading either to a fine or the compulsory withdrawal of the locomotive from service.

To meet the complex responsibilities of the mechanical side of railroad operation, and maintain the equipment in a state of preparedness demands, as in every other department of the business, a balanced and efficient organization, whose members shall be devoted to the work and sustained by the animated pursuit of a common purpose.

The usual staff organization of the mechanical department consists of a chief officer, styled superintendent or general superintendent of motive power, mechanical or general mechanical superintendent, superintendent of machinery, or other title, appropriate to the office. On the larger roads the chief mechanical officer, as a rule, is assisted by one or more deputies, bearing various titles, who have general authority and, sometimes, have direct supervision of the shops, thus standing between the shop organizations and the chief of the department. Not infrequently there is an officer charged with responsibility for the work of the car department, with the title of superintendent of car department, or master car builder. On the Erie Railroad there are three mechanical superintendents. One has general charge of all car work of the system. One is assigned to each grand division of the road, in direct charge of the locomotive shops and has concurrent jurisdiction, in a restricted sense, over car work in his territory. The other regular staff officers are a mechanical engineer, electrical engineer, engineer of tests, chemist, chief boiler inspector and general inspectors of various grades and diverse duties. The larger roads add to the above two general officers who are absolutely indispensible where there is any pretense of practicing the higher phases of railroad economy, using that term in its scientific sense. There are an efficiency engineer who is in charge of shop costs and production, and frequently at the head of the piece work system, and an expert in locomotive economy, whose duty it is, to save fuel and look after the economical operation of the locomotive. On the Erie Railroad these officers are designated, respectively, as superintendent of piece work and apprentices and superintendent of locomotive operation.

The chief officer of the shop organization is the division master mechanic, or shop superintendent, on the locomotive side and a shop superintendent, foreman of car repairs, or an officer having some other suitable title, at the car shops. The division master mechanic frequently has charge of all mechanical work on his division; but it is customary to have large car shops entirely independent of his authority.

The shop organization varies with the size of and importance of the shop. At a large shop there are usually a general foreman, an assistant to the general foreman who is in charge of shop costs and production, departmental foreman, inspectors, etc.

In the division mechanical organization special mention should be made of the engine terminal which, by reason of its functions, is not properly classified with shop operations, whether closely associated with them or not. The engine terminal is to railroads what the coaling station is to ships on the high seas. Nothing will paralyze traffic movement and demoralize operation quite as effectively as putting an engine terminal out of business, or to have it in charge of a man who is incapable of facing all emergencies, and overcoming everything, but the physically impossible. This is so well understood that we are accustomed to say, that engine house foremen like poets are "born not made."

Associated with the divisional organization are the road foremen of engines and the inspectors of locomotive service, called supervisors of locomotive operation on the Erie. The mechanical department has concurrent jurisdiction with the transportation department over these officials.

It has been shown that a strong organization is essential to good operation; but there are limits to what may be done by the best organization and the most devoted and diligent application, on the part of the personnel. This brings us to the consideration of shop and engine house facilities. A good organization may overcome, in a measure, the handicap of inferior, inadequate or obsolete facilities, but it can never supply their lack.

The change from wood to steel in car building calls for new facilities, adapted to repair steel cars; the increase in the size, and complexity, of the locomotive unit calls for larger roundhouses, improved engine terminal facilities, and for heavier and more improved machinery and appliances to handle and repair them. The needed facilities are scarcely installed when an insistent demand is made for their improvement, so rapid are the changes that make achievements of to-day, but stepping stones, for the greater achievements of to-morrow.

But the mechanical side of railroading produces no income, it sends no actual cash into the treasury regardless of what it may keep from going out. Its mission is to do its part to keep the instrumentalities of commerce in shape to earn revenue. Each passenger locomotive may earn approximately $3,700 and each freight locomotive $52,000 per annum, but the sad truth ever confronts the mechanical man, that from twenty to twenty-five per cent of all operating expenses is laid up against him. He is a good spender and he is always "broke." His stories, therefore, are apt to be of the hard luck variety, and they are received with the same cordial enthusiasm that a subscription paper, to buy the Kaiser a loving cup, would be received in London or, as the solicitation of a similar token of affection for King George would be received in Berlin.

The mechanical man makes up a modest program for a new roundhouse at one point; two or three modern coal and ash handling plants; a couple of new power plants; perhaps a new shop; a hundred new machines and a job lot of fifty thousand dollars' worth of small tools and miscellaneous things regarded as useful in his business. When the hard pressed management makes a few minor revisions of his plans he cheerfully accepts the allowance, builds an extension to several stalls of the old roundhouse to house the big engines, puts new flues in the boilers of the much slandered power plants, gives the old shop a coat of whitewash inside, forgets the rest and, like a true railroad man, settles down to do business with what he has, as better men have done before him and will do after he has gone. After all, he reasons, there is something to be thankful for. If something had to be cut off, far better the improvements than his head. Then, if he is somewhat of a philosopher and given to rather fanciful speculation, he may occasionally dream, and even pray, that a certain high administrative body at Washington may get religion, because when men get religion, the hereafter is illuminated with a brightness never before realized and they hasten to make reparation for the wrongs and misdeeds done in their days of evil. He well knows that complete reparation would cause the improvements he recommended to appear in a different light, and might even make possible those bridges, the maintenance of way people have been after so long, and the ties and rails needed so badly.

"New occasions teach new duties; Time
  Makes ancient good uncouth;
They must upward still and onward, who
  Would keep abreast of truth."

Much ancient good has been found to be uncouth in railroading, within recent years and, sad to relate, much has been discovered to be very uncouth that never was any good.

One ancient good, that has given way to enlightenment, is the old railroad apprentice system. In the old days, the average apprentice who served his time in a railroad shop, learned to operate the various machines and to repair locomotives, but he was rarely an all around mechanic. Little, if any, attention was given to his educational qualifications when he was apprenticed and, unless he had the ambition to attend night school or apply himself to self study, he usually lacked that knowledge of the principles of mechanics and of higher mathematics, which would fit him to extend his field of usefulness. Also the master was not particular, at all times, to concern himself about giving the novice the best opportunity to become a good all around journeyman. If the apprentice had special aptitude for certain work he was too frequently kept at it, instead of moving him about to afford a wider range or training.

Also certain details, like valve setting, air pump, lubricator, injector and tool room work were regarded somewhat in the light of trade secrets and the apprentice was fortunate who got any experience or knowledge of this work.

These unfruitful conditions were well known, but finally progressive thinkers came to the realization that the system was all wrong and that it was not beneficial to the master, the apprentice or to society, and out of these conclusions has grown a system of railroad apprenticeship and industrial education of the highest type.

Speaking of the apprentice course of the Erie Railroad as typical, I can say that the railroad apprentice to-day has every advantage to become a well-rounded mechanic, and is given a basic technical education that equips him for the widest usefulness. In most cases the instructors are college graduates and are far better equipped to teach industrial education than many employed for that purpose, in high schools, trade schools and other places, where that branch is taught.

Contrary to the practice under the old system, the apprentice is now carefully and fully instructed in the very things that, formerly, were withheld from him, and extreme care is taken to make him proficient in every detail of the art. Not only is the course free but the apprentice is paid for his time while under instruction. The results have been most gratifying.

Just now interest centers in the achievement of the Meadville School, in building a miniature locomotive. This machine is an exact reproduction, to scale of a K-I Pacific type locomotive and you are all cordially invited to inspect it at the Erie ticket office, 399 Broadway, where it will soon be placed on exhibition. The locomotive was laid out, built and finished complete by the apprentices and we point to it, with great satisfaction, as a justification of the modern ideas of industrial education as applied to railroad work.

Railroad work, beyond question, is very interesting. It is frequently remarked, that there is something about the life which attracts and holds men, with greater force, than its material rewards. If we seek far enough the reason will be found in that lofty, and exacting attribute, of human nature which withholds contentment and satisfaction from the normal man unless he can feel himself a part of the world's real work. It is not ambition, for ambition is not always worthy, and sometimes is even sordid and mean. It is rather that vital and deathless something of soul life, deep rooted in character, that gives off only inspiration and courage. It is that same force that sustains and disciplines real men to find their chief reward in work well done, and in efforts well directed to ends worth while.

Railroad work surely has a high place in the activities, which most benefit mankind, and it is not strange that men should find the field attractive. Recalling our subject for this evening, it is believed that the mechanical side of railroading is, at least, as interesting, as attractive and as fascinating as any other branch of the service.

But I would not have you get the impression that I am speaking as a mechanical man. Rather would I have you think of me as a railroad man. I have scant tolerance for departmental distinctions. Departmental lines are very proper, and necessary, to fix the lines of responsibility and for the orderly and effective conduct of business; but no further. It is trite to say that all energies, that are not directed toward the ultimate and legitimate ends of any business, are wasted or at least impaired. That end in the railroad business is to sell transportation at a decent profit, and everything which diverts energy, that the business is taxed to create, from that object is a thing to be weeded out. This thought may be illustrated by picturing a wide stream in whose course, at a certain point, it must pass through a long narrow gorge. On the upstream side the waters are collected, by various tributaries, from hundreds of square miles of drainage area. The stream gains in volume until, at the narrows, the waters pile up and develop a tremendous, concentrated energy of well nigh resistless force, capable of being transmuted to the untold benefit of mankind. On the down stream side the waters spread out again into a wide, placid and, perhaps, sluggish stream as if tired by their demonstrations of energy passing through the gorge. The one shows the cumulative effect of the concentration of energy; the other of its dissipation.

Those who accustom themselves to see departmental work in capital letters, failing to co-ordinate their relations with the general interests of the business, are in danger of acquiring a perspective like that of the fly in the fable. You will recall that a fly who had perched himself on the axle of a chariot become much puffed up by what he fondly believed to be his ability to raise so much dust. In how much more kindly esteem would history regard this fly had he been willing to share his dust-raising glory with the chariot wheels and the horses. The fly was afflicted with a distorted point of view. Also he lacked generosity and a sense of humor.

We all preach about co-operation but constructive evidence of its practice does not equal the noise we make about it. The word co-operation, like efficiency and other mouth-filling terms, is rattled about the country like a pebble in a tin can. Many know what constructive team work is, a few practice it, but the majority merely talk about it, and look wise.

In 1878 there was widespread discussion about the resumption of specie payments. Much speculation was indulged as to whether it could, or could not, be done, and many predictions were made of the dire calamities that would follow an attempt to do it. John Sherman said it could be done and he quietly, and simply, announced that on a certain date the Government would pay its obligations in gold. That settled the matter. The same decisive action is all that is needed to effect real co-operation, and co-ordination of purposes, in railroad work, and, as Sidney Smith said, apropos of the proposition to build a wooden walk around St. Pauls, "If we lay our heads together the thing is done."

As a parting thought, following much that I fear has been tedious rather than instructive or entertaining, let me urge that a worthy ambition, diligence and industry are the price of success and the field is open. Success is a relative term and when one achieves a goal, approaching the ultimate limits of his capabilities, he has done well notwithstanding that he may not fill the world with his fame or receive its applause. In the words of one of the greatest thinkers of all time:

"He that seeketh to be eminent among stable man hath a great task, but that is ever good for the public, but he that plots to be only only figure among ciphers is the decay of a whole age."

Operation

Safety Record of the Chicago and North Western.

THE Chicago and North Western's safety record for the fiscal year ending June 30, 1914, shows 33,000,000 passengers carried over its lines without a single fatality to a passenger. Furthermore, this remarkable achievement was accompanied by an increase in the number of travelers carried as compared with the year before of nearly a million. The total mileage traveled by passenger trains during the year was 21,537,781 miles.

The management believes that this record is proof positive of the success of the policy on which the Company has been working which is to provide the best of everything including all safety precautions and devices. It makes a special effort to maintain a regular, convenient, comfortable and even luxurious service and in addition, maintains its track, stations and equipment to the highest standards and is constantly installing the most improved type of signals. In other words, the greater safety movement in all its ramifications is thoroughly practiced in the operation of the North Western's trains, as is indicated by the splendid results for the past fiscal year.

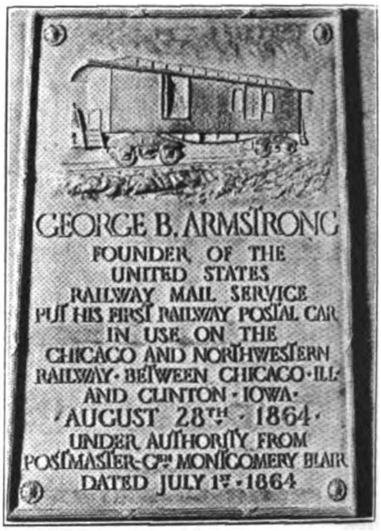
Bronze Reproduction of First Mail Car.

TO commemorate the historical fact of running the first postal car on its lines and also to keep fresh in the minds of the public the help and encouragement given to Mr. George B. Armstrong in founding the United States Railway Mail Service, the Chicago & North Western Railway Company has placed in its new Chicago terminal station a handsome bronze tablet showing this car and giving the date of the first trip of the first railway post office car run in the United States.

This tablet shows one of two full railway post office cars built in the United States, built in May, 1867, by the Chicago & North Western Railway Company after plans prepared by Mr. George B. Armstrong, founder of the railway mail service.

These cars were run from Chicago to Fort Howard, Wisconsin and from Boone to Council Bluffs, Iowa. The first railway post office car operated in the United States was run between Chicago and Clinton, Iowa, on the 28th day of August, 1864. That car formed the basis of the present railway mail service. The Chicago & North Western Railway was the only railway corporation in the country that gave any encouragement to Mr. Armstrong in his efforts to secure postal reform and greater celerity and security in the transmission of the mails, and gave him the material help necessary to carry out his plans.

The first trip was a great success and demonstrated the enormous value of the new railway post office to the business interests of the country.



Bronze Reproduction of First Mail Car, Which Has Recently Been Placed in the New Chicago Terminal of the Chicago North Western Railway.

Track Inspection on the Southern Pacific.

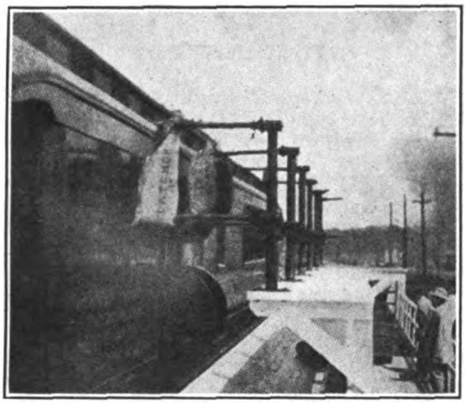
TWO million and a half miles are covered each year by the track walkers who patrol the right of way of the Southern Pacific Company. Each day every one of the seven thousand miles is gone over piecemeal. Roadbed, tracks, switches, bridges and trestles, culverts, signals, everything, is carefully scrutinized that trains may move along quickly and with safety. On straight tracks, where there is no danger of being struck by trains, the track walker rides on a velocipede. Where there are many curves or train service is frequent, he walks on foot.

The inspector is equipped with red flags, lanterns, fuses, torpedoes, spike-mauls, track wrenches and extra bolts, so that he can take care of whatever emergency situation may arise. The automatic block signal, by the position of its blade, will show any interruption in the continuity of the rails; and the work of the track walker is an added safety precaution.

Chicago and Alton Adopts Automatic Mail Exchange System.

THE Chicago and Alton has contracted with the Hupp Automatic Mail Exchange Company of Chicago for the installation of its mail exchange system on mail cars and thirty-three mail exchange stations between Chicago and St. Louis. The advantage of the Hupp System is that an almost unlimited number of bags can be exchanged while by the old system, only one bag per station was permitted. Another advantage is that the Hupp System is automatic, the mechanism performing the work being driven from a worm attached to the middle of one of the axles of the mail car. This mechanism is thrown into gear by means of a trip located outside of the rail of the roadway, just 390 feet from the exchange station.

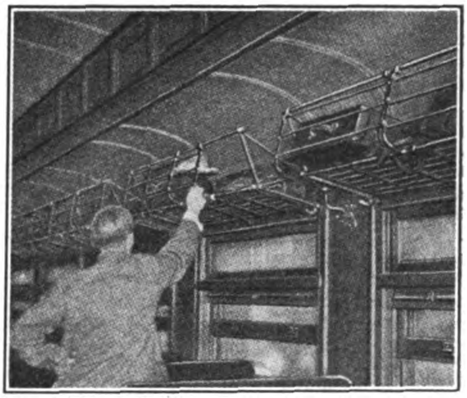
When the machinery is set in motion the car door begins to open and continues opening while the train covers a distance of 180 feet. The next step is the opening of the receiving arms, which are attached to the side of the car. They open at the forward end in the manner of a gate, and become fully extended as the train travels another 180 feet. At the same time the delivery chute is automatically moved out of the door and by the time it reaches the station receiving trough, as shown in the illustration, the bottom of the delivery chute is at an angle of 45 degrees, and the mail bags slide from the car by their own weight. The mechanism then brings the chute back inside of the car, closes in the receiving arms and closes the door. By the time the train has traversed the third 180 feet these arms have been returned to their original position at the side of the car. It is necessary for the car, however, to travel several hundred feet more before the cam wheel completes its revolution and is automatically locked out of action. The receiving arms start to extend outward about 30 feet before the delivery chute starts out of the car, but the delivery chute returns before the receiving arms are folded. It takes 1,080 feet for the mechanism to perform a full cycle, but it is so arranged that the car passes only 780 feet from the time the door begins to open until it is entirely closed.



AUTOMATIC MAIL EXCHANGE SYSTEM WHICH PERMITS THE EXCHANGE OF AS MANY AS TWELVE BAGS AT ONE TIME.

The New Safety Baggage Rack of the Atchison, Topeka and Santa Fe.

THE Atchison, Topeka & Santa Fe has placed in service on some of its through passenger train cars a new type of baggage rack designed by the engineer of car construction. These racks were designed to provide ample storage capacity. They are provided with gates which slide on the frame of the rack and serve to keep the bags, parcels, wraps, or whatever may be placed in the rack, in place. The illustration shows the racks installed in one of the day coaches recently built by the Santa Fe, and also shows the way in which the gates are operated by the passengers. There are two gates to each rack, so arranged that each may be operated independently of the other.



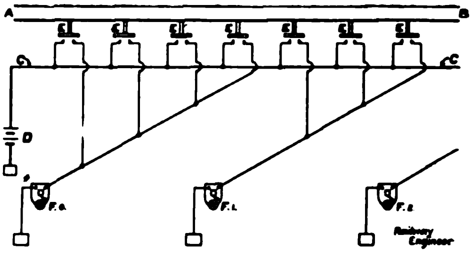
NEW SAFETY RACK WHICH ELIMINATES THE DANGER OF BAGGAGE FALLING UPON PASSENGERS.

The racks are of special advantage, especially on through trains where a considerable amount of hand baggage is often carried by the passengers, in that they will hold more than the ordinary rack now used, and at the same time prevent the luggage from falling on the heads of the passengers. In this way it eliminates damage claims from these causes and provides sufficient capacity to hold all the baggage of the passengers, thus keeping the aisles free from obstruction. The construction is so substantial that the gates will slide easily when the rack is loaded to its full capacity.

An English Warning Signal for Railways.

M. B. COOPER, of London, England, has invented a safety warning signal for railways which has for its object, the elimination of risks of engineers and firemen mistaking, or not seeing signals, and, so far as England is concerned, has the additional advantage of doing away with the use of extra signals during foggy weather.

The system works as follows:—Along the rail A. B. an electric wire C. is placed, which conveys positive electricity from the battery D. or from an electric generating station connected with contacts E., which are placed in such a position that the weight of the train on the rail A. B. would act upon the contacts E. and form a circuit. At given distances would be placed electric bells F. on, for instance, the "up"



Safety Warning Signals for Railways.

line, and horns or other suitable instruments on the "down" line. These bells F. would be so placed that any train would make contact and make a circuit, and so set the alarm bells ringing two miles more or less behind the train. In a similar manner the alarm bells may be set ringing two miles more or less in front of the train. The electric bells F0, F1, F2, are placed on the side of the track one mile more or less apart.

For example: The train which is called X starts from the terminus and makes contact all the time as far as the two mile bell F2, these contacts connected with F1 continually ring the bell F0 at the terminus. When X has passed the two mile bell, the terminus bell ceases to ring. When X has passed the two mile bell and is making towards the third mile bell, the first mile bell F1 starts ringing until X has passed the third mile bell F3. When X has passed the third mile bell and is making towards the fourth mile bell the second mile bell starts ringing until X has passed the fourth mile bell, and so on.

Another train which is called Y leaves the terminus on the same track must evidently leave after the terminus bell F0. has ceased ringing, i. e., the train X has already passed the first two mile bell F2.

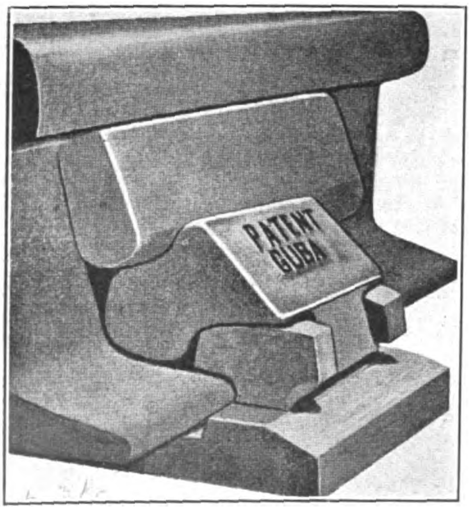
Suppose Y reaches the first two mile bell, if same is not ringing, then it is evident that the line is clear for two miles ahead, viz., the third mile bell. Y reaches the third mile bell and finds that this bell is ringing; this means that X has broken down or stopped for other reasons, and therefore Y must stop until the third mile bell ceases to ring, thus avoiding any possible chance of collision.

Mechanical

A New Foreign Rail Fastening.

THE accompanying illustration shows a rail fastening invented and recently patented, by a citizen of Hungary. As indicated, it consists of a block which fits over and bears upon the head (or heads) of the dog spikes, screws or bolts used to secure the rails to the sleepers. The top of the block is hollowed out to form a seat for a taper steel key, which is driven between this seat and the underside of the head of the rail. The lower block sometimes has lips to embrace the sleeper or sole-plate.

This fastening has been laid on the Roumanian and Hungarian State Railways, the Swiss Federal Railways, the Aussig Teplitz and several other railways on the Continent. It gives great support to the head of the rail, and is said to entirely prevent lateral displacement and creeping. It also prevents the spikes working loose and no "hammering" takes place. The keys are marked with an arrow and are always driven in the direction of the creep.



NEW EUROPEAN RAIL FASTENER WITH NOVEL FEATURES.

Frictionless Rails.

THE New England Railway Club listened to a most comprehensive talk at its November meeting on "Typical Rail Failures," by Mr. F. A. Weymouth, engineer of tests of the Maryland Steel Company. Mr. Weymouth took into consideration practically every known rail failure and its cause and by means of illustrations so clearly presented the subject to his audience that his address was considered one of the most informative and important ever delivered before the New England Railway Club.

It would be impossible to produce within the limits of the "Railway World" even a satisfying abstract of this most important paper, but it is suggested that to all those interested in the matter of rail failures and the development of a rail in which these failures may be overcome, should procure a copy of the Club's proceedings for that month.

Mr. Weymouth in his closing remarks referred to a frictionless rail on which a group of engineers have taken out basic patents and which is the result of a very careful study of operating conditions and rail wear on curves. To quote from Mr. Weymouth's remarks:

"Having in mind the action of the wheels in passing around a curve, as noted above, it was observed that the line of contact on the low rails was greater, and, in many cases, the weight also was greater on the low rail than on the high rails. This necessitates that the slipping must be confined to the high rails and since the slipping is periodical and only occurs just enough to adjust the truck to the radius of the curve at intervals, the wheel on the high side of the curve is constantly impinging against the high rail. It is readily seen that if we can concentrate all of our slipping on the low rail the truck will readily adjust itself to the radius of the curve, and we will thus check the impinging action against the high rail.

"To accomplish this, the Frictionless Rail Company recommend the use of a rail with a much narrower head on the low side of the curve. This reduces the line of contact and concentrates the slipping to the low rail."

At the conclusion of Mr. Weymouth's paper, Mr. T. F. Dwyer, Jr., took up the discussion of

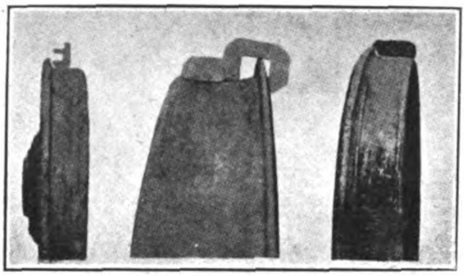


FIG. B.

the Frictionless Rail and presented a half dozen lantern slides showing conditions of wear and sections of this rail which are offered to overcome some of these conditions. We present herewith the figures and photographs employed by Mr. Dwyer to illustrate his remarks.

Figure A shows wear on the high rail and low rails of a curve, respectively. Contour of the rails when they were removed from track is indicated by the dotted lines. It is our opinion that a great part of the side wear on the high rail is due to the broadening of the head of the low rail when it flows over. This wide head on the low side offers resistance to lateral slip of the wheels after the outer wheel flanges have struck the high rail.

Figure B illustrates conditions of wheel wear which are more or less common. The flange is the important indication of wear. The wheel at the left has a well defined right-angled flange; the middle one has a remarkably sharp flange, and the one on the right has a more or less apparent false flange at the right side of the tread. With rail wear decreased on curves through the agency of a rail which lessens the friction, it is self evident that wheel flanges are not going to suffer such punishment as they do now.

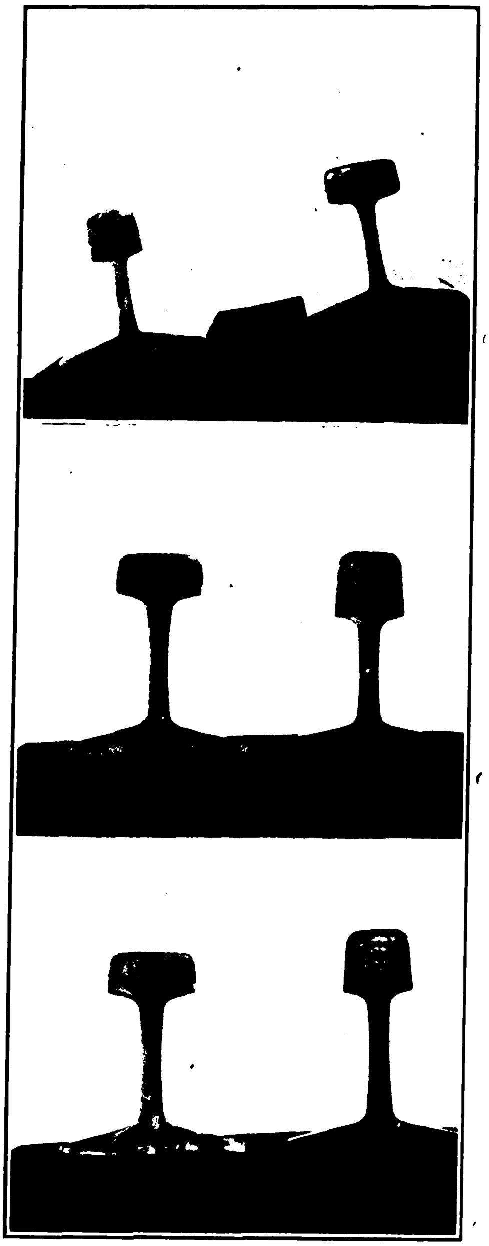
Figure C shows a Frictionless Rail with the standard rail to which it is companion. The standard rail is an 85-pound A S C E section. Frictionless Rail is used as the low rail on curves with the standard rail as the high rail. This simple construction reduces the ordinary pressure against the high rail which results in side wear, widening of gauge and increased resistance to trains passing through curves.

Figure D illustrates a Frictionless Rail companion to 90-pound A R A Type A section. This Frictionless Rail is being used by about seven western roads with good results. Its height is the same as the standard rail, its fishing space is less, but of such dimensions as to accommodate a bar which fits the 90-pound A R A Type B rail, and below the head, the web and base are the same as the standard rail.

Figure E shows another Frictionless Rail companion to the 90-pound A R A Type A section. This Frictionless Rail is being used by the Southern Pacific lines and several other roads. It is a bit higher than the standard rail, so that it may have the same fishing space as the standard rail and accommodate the same angle bar.

Figure F is a view of a sharp curve laid with Frictionless Rail. Most of you will recognize it as the east end of the "Y" at Waltham on the Boston and Maine Railroad. Frictionless Rail has been on this curve as the low rail for nearly a year. The rail wear in this length of time has been very slight. The track has remained to gauge, and there has been little or no maintenance on the curve. This curve is 16 degrees 30 minutes in curvature, so that the rail is getting some service here.

Figure G is a view of the Belmont curve on the Boston and Maine Railroad. Traffic is heavy over this curve, and there are all kinds of trains at all speeds. This curve rides noticeably better since Frictionless Rail was laid last November. A railroad man whom we brought out to see the curve lately found an interesting bit of evidence that the rail wear was slight and that the lateral thrust against the high rail was re-



FIGS. C, D, AND E.

duced. On the gauge side of the high rail, he found a slight lip of metal which was sure evidence that no cutting has been going on.

Frictionless Rail is a patented construction which was designed primarily to eliminate excessive wear of the high rail on curves. It does this by reducing the side thrust against the high rail, through its allowance of lateral slip. I think we have demonstrated on all our curves that we do this. And the only conclusive way to be sure of the rail is to see it in track.

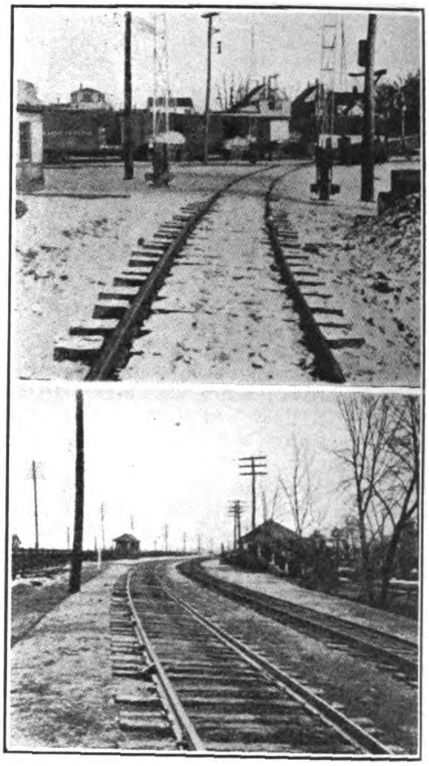
The design of Frictionless Rail has proven to be a desirable section. It rolls very well and its contour remains perfect in track. The point that Mr. Weymouth made with his slide showing a false flange riding on the low rail, is interesting in connection with Frictionless Rail. It is so narrow that false flanges do not ride on it. There is very little flow of metal, and the load is carried in the center of the rail over the web.

The real function of the rail is to reduce side wear of the high rail. This is one step only in the solution of rail problems, but it carries interesting conclusions. Your track on curves remains to gauge better, your ties receive less punishment, and trains pass through the curve with greater ease. You save your wheel flanges because you get around the curves more easily, and you save the rest of your equipment, such as journals, trucks, etc., as a result. We feel that a large part of the energy which was formerly devoted to destruction is now devoted to traction.

We have a series of sharp curves which are laid with Frictionless Rail on a certain railroad ranging from four degrees to twelve degrees. Frictionless Rail has been laid here about two months. After it had been down a month, we received word that certain classes of power were hauling from eleven to fourteen per cent more freight over these curves than they had ever been able to haul before Frictionless Rail was laid. These figures are higher than we hoped for, but are actual and were compiled in ordinary service.

We have a couple of curves in the South Station yards—the inbound tracks of the Boston & Albany and the New Haven. The interesting point on these curves is the fact that long, heavy trains that receive a stop signal on the curve, are able to start without additional help from a switching engine. I believe that there were formerly reports once or twice a week that trains stalled there. In the four or five months that Frictionless Rail has been in service at this place, there have been just two such reports. One report was on an eight-car train that could not get through alone; on investigation, it was found that the brakes had become set on two of the cars. We have had no explanation of the second yet.

Another point about Frictionless Rail curves is that they ride more easily than ordinary curves. A friend of ours who is quite familiar with Frictionless Rail was riding over a road in Pennsylvania about a month ago. He knew that this road had Frictionless Rail on a number of their curves, but hadn't seen it. Finally, riding through a certain curve, he thought he recognized the gliding motion, hurried to the rear of the car and found that he was riding over the rail. We consider that good testimony on the riding qualities of the rail.



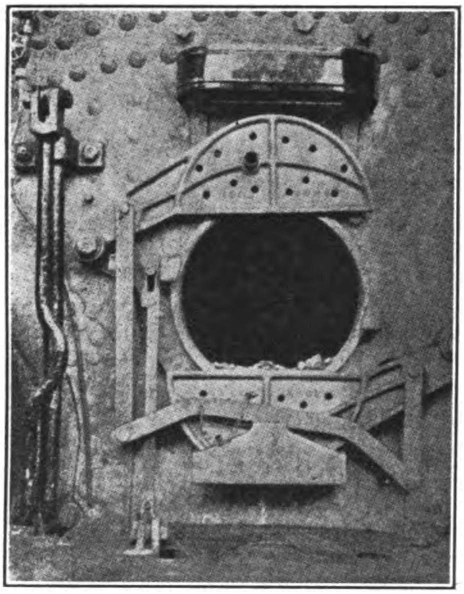
Figs. F. and G.

At the present time we have tonnages of Frictionless Rail on about twenty representative roads all over the country. The reports are uniformly good and grow better as the length of service of the rail grows. The absence of actual complaints or criticisms is truly remarkable considering the development of a device which is so effective, but revolutionary.

The point I wish to emphasize on Frictionless Rail is that the rail is purely a design. The track construction with standard rail on the high side of a curve and Frictionless Rail on the low side, is the thing that does the work. We do not attempt to specify chemical composition of the metal or methods of manufacture. That is in far better hands than ours. The railroad buys the rail from the manufacturer and deals with the manufacturer just as with ordinary rail. Of course we are interested in getting as good metal in Frictionless Rail as the railroad is willing to buy; manganese rail would probably allow you to forget your curves entirely. If Frictionless Rail solves some of your troubles on curves and relieves certain strains, I think that you can consider it just one step in the solution of rail problems.

A Locomotive Gravity Fire Door.

P. C. WITHROW, mechanical engineer of the Denver and Rio Grande, has developed and patented a foot operated locomotive fire door, the two halves of which are so arranged as to counterbalance each other, which has been experimentally in use on the Denver and Rio



A Gravity Fire Door Developed and Patented by a Mechanical Officer of the Denver and Rio Grande.

Grande for about two years and has met with considerable favor.

The door is in two sections, the upper part being pivoted at the left and the lower part at the right. The foot lever employed to open it is located at the left and twenty inches out from the back head. This lever operates the door opening cam which has a specially formed shoe at its upper end bearing against the under side of the upper door. The mechanical arrangement gives a comparatively large leverage by means of which to start the door without unnecessary effort, and the decreasing effort as the movement progresses, keeps the travel of the foot pedal within reasonable limits. The upper door has sufficient overbalance to insure prompt closing on releasing the pressure from the foot lever. As the closing movement proceeds, the various points return to a normal position, thus destroying the overbalance, and the closing is completed without slamming. The foot lever bracket may be fastened either to the back head or the deck, as is most convenient.

Rail Failures During 1913.

The American Railway Engineering Association has just issued a bulletin containing a report on the rail failures for 1913, prepared by M. H. Wickhorst, engineer of tests, Rail Committee of the American Railway Engineering Association.

This report deals with the statistics of rail failures for the year ending October 31, 1913, furnished by various railroads of the United States and Canada in response to a circular sent out by the American Railway Association. The information furnished by each railroad showed the number of tons laid of each year's rolling from each mill and the total number of failures that had occurred in each year's rolling from the date laid until October 31, 1913. Heretofore only the failures occurring in the year covered by the report were shown, but in this report the total failures occurring since the rail was laid are made the basis of comparison.

The tonnages of rail represented by these statistics are shown below:

Year Rolled	Bessemer	Open-hearth	Total
1908	282,945	156,120	439,065
1909	432,155	461,261	893,416
1910	564,713	828,111	1,392,824
1911	276,933	646,809	923,742
1912	80,146	939,025	1,019,171
1913	63,472	793,557	857,209

Failures Classified by Mills.

For the purpose of determining the failure performance of the rails furnished by the different mills, the statements were first grouped between Bessemer and open-hearth steel. They were then grouped by steel mills, and each mill's tonnages grouped by the year the rail was rolled. Totals and averages were obtained for each of these groups.

Failures of Bessemer and Open-Hearth Compared

Year	Failures per 10,000 tons		Comparative failures	
rolled	Open-Hearth	Bessemer	Open-Hearth	Bessemer
1908	2168.9	302.1	100	112
1909	109.0	212.4	100	195
1910	57.6	132.1	100	229
1911	37.4	94.2	100	252

The rails for 1912 and 1913 are not included in this comparison, as they are probably too young for the comparison to be as reliable as for the older rails. Comparing the different years, the failures per 10,000 tons of open-hearth rails are proportionately much larger for the year 1908 (approaching the number of Bessemer failures), and this suggests the thought that there were faulty practices in the early rollings of open-hearth rails that were improved upon in later years.

In order to show the relative number of failures from each of the mills and to show the ranking of the mills as regards the failure performance of the rails rolled by them, the following table has been prepared. Taking the average number of failures per 10,000 tons of all the mills in any year's rolling as 100, the relative number of failures of each of the mills is shown for the years 1908, 1909, 1910 and 1911. The later rollings are not included because of being too young.

BESSEMER.

Mill	Rank	Relative failures
Maryland	1	56
Cambria	2	71
Lackawanna	3	89
Illinois	4	89
Carnegie	5	161
Algoma	6	191
Average		100

OPEN-HEARTH.

Mill	Rank	Relative failures
Colorado	1	20
Tennessee	2	26

Lackawanna	3	52
Pennsylvania	4	58
Maryland	5	76
Carnegie	6	96
Illinois	7	107
Cambria	8	136
Bethlehem	9	210
Algoma	10	312
Dominion	11	539
Average		100

The "100" given as "Average" it should be understood, is not obtained as the average of the column below which it appears, but is taken to represent the failure performance of the tonnage covered by these statistics of all the mills during the four years represented and for Bessemer and open-hearth rail separately. The "Relative Failures" give the number of the failures that occurred in the same tonnage that had 100 failures as an average of the rails of all the mills.

A retabulation was made of all the failure reports with special reference to the matter of performance of different sections and was divided into three groups as follows: Thick base high rails, or the A. R. A. type A group; thick base, low rails, or the A. R. A. type B group, and thin base, or A. S. C. E. group. The results indicate that the various types of section have about the same failure tendency, although on account of the differences in service no definite conclusions can be drawn as to the different types of section. The thin-base rails showed a somewhat larger percentage of failures as base breaks and broken rails, although the failures per 10,000 tons were about the same.

Comparisons were made of failures by weights of rail, but definite conclusions as to the failure performance of different weights of rail probably cannot be made from these statistics because of the difference of service to which the light and heavy rails are subjected. The comparisons indicate that the weight of rail per yard does greatly influence the failures per 10,000 tons.

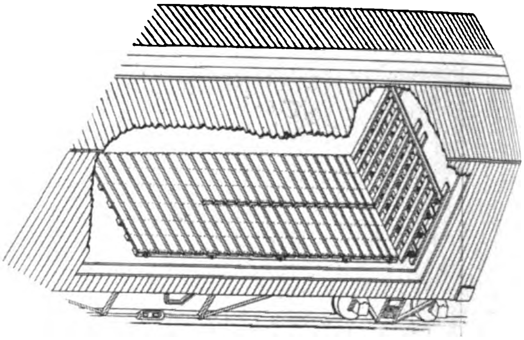
A comparison of the rails from the different ingot positions indicated that, as a general average, the failures classified as head failures of the "A," or top rail, were 2.7 times the failures of the other rails of the ingot in Bessemer steel and 1.8 times in open-hearth steel. In the failures classified as base breaks and broken rails the different rails of the ingot showed about the same failure tendency, or a little less in the "A," or top rail.

A comparison of rails made of steel treated with titanium with those of plain steel showed that in some cases the treated rails gave fewer failures per 10,000 tons than the plain rails, and in other cases the plain rails govern the smaller number of failures. As a general average the titanium-treated rails govern somewhat less failures per 10,000 tons.

The table showed that, after a period of service of five years, as a general average, about 1¼ per cent of the rails were reported as failed.

Shock Absorber for Egg Shipments.

THE accompanying drawing presents the general appearance of a device which has recently been invented for the purpose of protecting freight of a fragile nature against breakage due to shock while in transit. Patents have been applied for in the name of B. Monesmith of Cresco, Iowa and George E. Cutler, of New York City. In two experimental shipments of eggs from Cresco, Iowa, to New York City, in which this device was employed, both arrived at destination in perfect condition and each consisted of 400 cases, forming a refrigerator car load. The principles involved include the placing of the load upon a disengaged floor or platform free to move longitudinally upon the floor of the car but provided with means of absorbing the momentum due to this movement, without shock to the lading. In the shipments referred to, rollers were used to permit the longitudinal movement, while shock absorbers at each end of the car absorbed the motion in such a manner as to cause no shock to the contents of packages. How well this shock was cared for is well illustrated by the fact that in loading a space of about six inches remained unfilled at the middle of the car. This was loosely filled with straw and excelsior which on being unpacked at destination showed practically no evidence of having been compressed by the shifting of the load in the two ends of the car, and an egg placed in this space came through unbroken. The cost of the equipment as applied to these cars is stated to be about $30 per car.

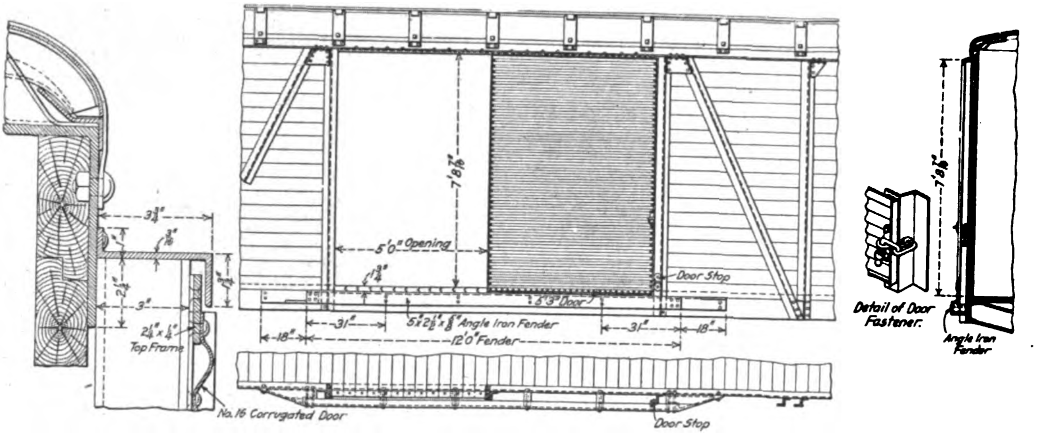


SHOCK ABSORBER SUCCESSFULLY EMPLOYED IN SHIPPING EGGS.

Steel Door with Fender Attachment.

THE American Car Roof Company, of Chicago, is manufacturing a corrugated steel box car door, fitted with a fender attachment to prevent the doors being raked by wagons or other obstructions, when the car is being loaded or unloaded.

The fender consists of a 5 in. by 2½ in. angle held out from the side of the car by means of cast filler blocks; at the ends snub-nosed castings are used. When shut the front end of the door fits into an angle, the idea being to prevent it from bulging out in case freight should accidentally fall against it on the inside. It is securely fastened by a one link chain and hook in the rear which it is believed is sufficient to keep the rear edge of the door from bulging out. This door does not run on pulleys, but is supported at the bottom near each end by hard bearing points.



Steel Door with Fender Attachment, Employed to Prevent Doors Being Racked by Wagons or Other Obstructions.

A Talk on the Locomotive Stoker.

Mr. J. C. F. STREET, manufacturer of the locomotive stoker which bears his name, gave an interesting talk before the October meeting of the Western Railway Club on the advantages of the modern locomotive stoker. He asserted that a stoker of the scatter type in order to be successful must measure up practically to all the following demands:

1. It must not break down.

2. It must do at least 90 per cent of all manual labor in taking coal from the tender and distributing it over the grate.

3. It must distribute coal evenly over the grate and provide means for firing heavy on any one section or zone in case the locomotive does not burn an even fire.

4. It must be constructed so that the fireman can at any time inspect the fire, rake it, and do shovel-firing without shutting off the stoker.

5. It must have several definite and marked rates of feed, have a capacity in excess of the maximum requirements, and feed coal continuously at any definite rate at which it is set and maintain that rate regardless of variations in steam pressure or grade amount or condition of the coal fed to it.

6. It must be constructed so that feeding to it bolts, spikes, rocks and any other foreign matter which may be in the coal will not result in a breakage and so that such matter or articles can be removed without taking the machine apart, in case they cause a clog.

7. It must have all parts easy of access for making inspection, repairs and lubrication.

8. The cost of inspection and running repairs must not be in excess of 75 cents per 100 locomotive miles.

9. It must be so simple in construction that the average fireman can understand the function of each part and be able to operate it successfully, after having received instructions during only one or two trips over a division.

10. It must have the opening through which coal is admitted covered with a screen which will reduce to a minimum the liability of the admission of foreign matter which will cause clogs.

11. It must handle wet coal.

12. It must keep a locomotive hot under all conditions with a lower grade of coal than is required for shovel-firing.

With reference to the class of locomotives which may be fitted to advantage with stokers, Mr. Street asserted that any locomotive, freight or passenger, which has a maximum tractive power of 50,000 pounds or over, should be so equipped, and in addition, any freight locomotive, which burns 4,000 pounds of coal per hour, continuously for periods of one hour or over, should also be mechanically stoked.

In discussing the advantages to be gained by the application of stokers, Mr. Street spoke in part as follows:

The primary object of applying a stoker to a locomotive is to enable the operation of that locomotive to its full capacity at all times and under all conditions, and this object is being attained wherever stokers have been applied.

There are only a few places where stoker-fired and shovel-fired locomotives of the same dimensions have been worked on the same division, and in the same class of service. Wherever this has been done the stoker locomotives have hauled a greater tonnage, and at a higher speed, than was possible with the shovel-fired locomotive.

The reason that this increased tonnage is possible is the fact that the fireman can secure and maintain the maximum steam pressure of his boiler at all times and under all conditions. It is not an uncommon occurrence on heavy freight trains for the engineer to work his cylinders at full stroke with the throttle wide open, both injectors on and maintain a speed of eighteen miles an hour. There is no difficulty in maintaining full steam pressure under these conditions and at this speed. It would be impossible for one fireman or any number of firemen to do this with a shovel, as the continual opening of the fire-box door reduces the fire-box temperature to a point which makes full steam pressure impossible.

In spite of the increased tonnage, there has always been an increase in the average speed of heavy freight trains, which is a great advantage where the traffic is heavy. As a result of this, the train dispatchers are some of the strongest advocates of stokers, as they say with stoker-fired locomotives they can handle the traffic much more rapidly than with shovel-fired.

This increased train speed results in a marked reduction in the over-time of train crews, as with the stoker-fired locomotive it is very exceptional for them to exceed the 16-hour law.

Another advantage which follows the use of stokers is in that the time required for cleaning fires, both at terminal and on the road, is very much reduced. A stoker fire clinkers much less than a shovel-fire, and statistics show, as a result of this, that it requires less than one-half as much time to clean a stoker fire as it does a shovel fire.

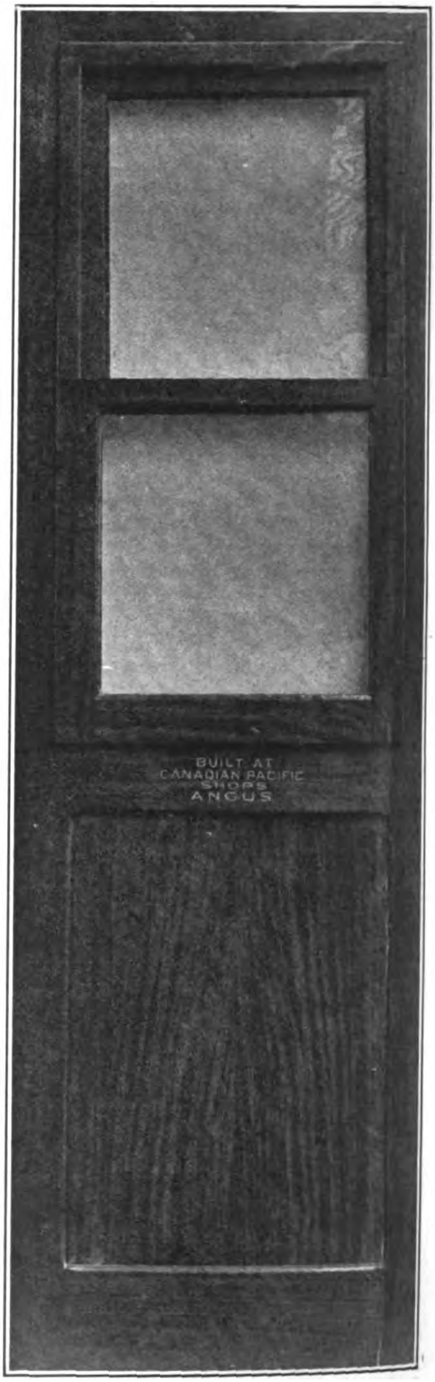
There has been a great deal of discussion on the question of fuel saving by locomotive stokers, and in some quarters there is an impression that a stoker-fired locomotive will burn more coal than a shovel-fired. The actual results show very clearly that, under average conditions, with an equal grade of coal, a stoker-fired locomotive will not burn any more coal than a shovel-fired, in proportion to the amount of work done. It is, however, an invariable rule, that stoker-fired locomotives are worked harder than shovel-fired, and are also given a poorer grade of coal. On many roads using stokers, they are giving the locomotives fitted with them a grade of coal which is so poor that it cannot be used successfully for shovel-firing at all.

It has been stated that one of the objections to a stoker on a locomotive is that it makes it too easy to waste steam through the safety valve. My reply to this is that a fireman who will waste steam through the safety valve with a stoker will do the same thing with a shovel. A railroad officer put this argument very hard to me as being a very bad feature against the stoker, and the next day, on his own road, I heard the safety valves on a switch engine blow full open for seven hours, without closing once. During that same period a large number of trains, both freight and passenger, came into the same terminal, and the pop valves on every locomotive, without exception, were wide open, and not one of them was stoker-fired. If the firemen were doing this with a shovel, what would they do with a stoker if this objection be valid? The fact of the matter is that there is less reason for waste at the pop valves with stoker-fired than with shovel-fired locomotives, because the fireman has better control of his fire. With shovel-firing he must leave a terminal with a heavy fire and full steam pressure, but with a stoker he can start out with very little fire, so long as it is clean, with his steam pressure from 15 to 25 pounds shy, and feel confident that he can have full pressure within ten or fifteen minutes at any time, and without regard to how the locomotive is worked. In fact, he knows the fire cannot get away from him—that he is absolute master of the situation at all times—and can control it without physical exertion.

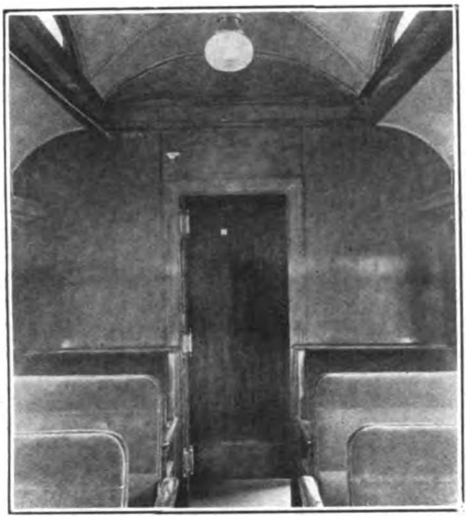
Veneered Steel.

A SUITABLE interior finish for passenger cars has been one of the problems which the railroads and car builders have been endeavoring to solve for some time and more especially since the advent of steel car construction. A suitable finish should in a general way possess the following qualities:— "Lightness, strength, durability, pleasing to the eye, poor conductor of heat, occupy a minimum of space and be fire resisting."

An all wood interior finish is bulky and does not seem to be in harmony with modern car construction. While it is possible by using great care to make a clever imitation of wood by using steel interior finish, the mere fact that



A Veneered Steel Door as Employed on the Canadian Pacific.



Bulkhead of Steel Passenger Car Built of Veneered Steel.

wood is imitated would seem to indicate that wood is the desirable finish but with the use of steel there are many disadvantages that do not seem to be much nearer solution than when steel was first used.

The steel surface is often wavy, even when new, particularly on flat surfaces. It is easily dented and the dents or buckles cannot be easily removed. It is very cold and noisy, and corrodes on the unexposed side.

It seems that the question of a suitable interior finish has been solved by the Canadian Pacific Railway. This is accomplished by the use of veneered steel. The veneer is of varying dimensions from 1-18 of an inch up, depending on the severity of service which is governed by the location in car and class of car.

This veneered steel is used in the construction of doors, panels, wainscot, bulkheads, sleeping car berths, sleeping car seat ends, etc., and is of approximately the same cost as steel or wood. It has the insulating effect of wood, is not subject to corrosion, as steel alone is, does not splinter in wrecks, is fire resisting and can be made attractive to the extent that one cares to go into the use of beautiful veneers. In other words, it combines all the good points of wood and steel with none of the disadvantages of either. It is not an experiment, as it has been used sufficiently long to demonstrate that it does not deteriorate. It is now in service on about sixty cars on the Canadian Pacific and its further use has been arranged for on diners, sleepers, coaches and all passenger carrying cars.

In the construction of doors, bulkheads, panels, etc., the veneer is used on each side of the steel and in this way oak, for example, can be used on one side and mahogany on the other, or any other class of wood that is desired. In the illustration, all of the wood in sight in the bulkheads, smoking room partition, etc., is of thin veneer, except the casings for the door frame and the moulding.

This veneered steel finish is the invention of Mr. R. W. Burnett, general master car builder, Canadian Pacific Railway Company, Montreal, P. Q.

Gasoline Switching Locomotive.

THE Motley County Railway has recently purchased a 300-horsepower gasoline switching locomotive from the McKeen Motor Car Company, of Omaha, Nebraska. The locomotive made the trip from Omaha to Matador, Texas, under its own power and is used in freight and switching service between Roaring Springs Junction on the Quanah, Acme & Pacific Railway and Matador, Texas. It has a tractive effort of 12,000 lbs. at 6 M.P.H. The motorman's position in the center and on the right side of the locomotive with an uninterrupted view in all directions, together with the air reverse control, enables the execution of signals with quite superior facility. Of the general features only the cab resembles the 200-horsepower locomotives built by the McKeen Motor Car Company, the 300-horsepower design being in the O-4-2 class.

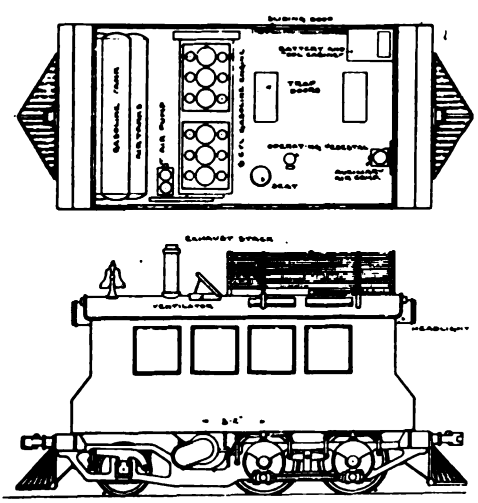
Frames are of cast steel, driving wheels 42 inches in diameter. The usual locomotive spring suspension with equalizers. The engine bed or shirk is a steel integral casting forming an efficient brace and reinforcement in tying together one side frame to the other.

The cab, an all-steel structure, covers the entire length of the locomotive frame between the bumper beams and is so bolted to the frames and buffer beams as to add very materially to the strength of the locomotive. All equipment accessories, etc., in the cab are conveniently located and do not obstruct the motorman's view in any direction.

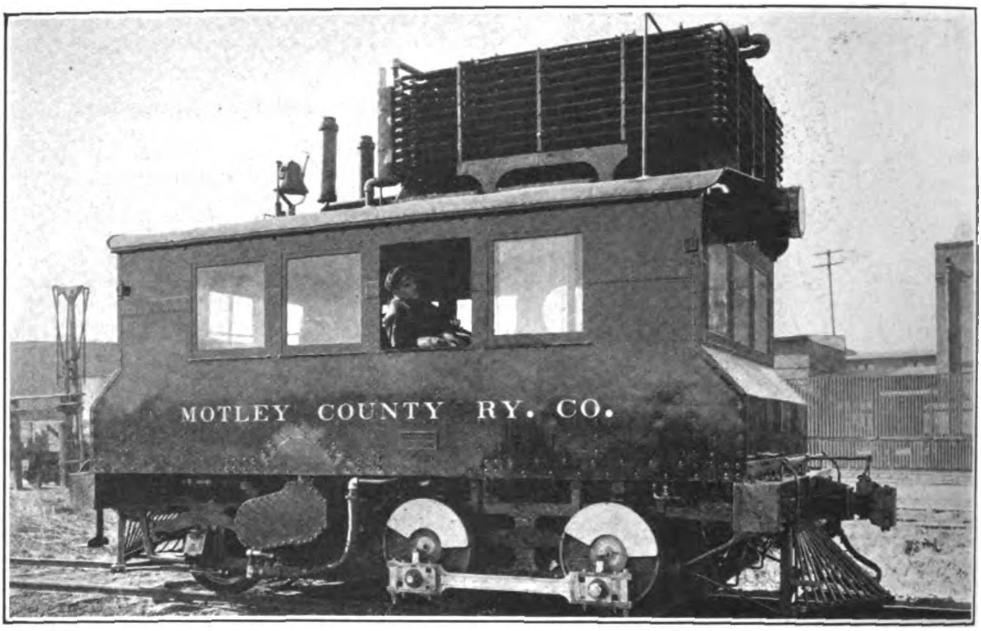
Headlights are operated by acetylene.

Straight air brake is used on the locomotive, which has a Gregory brake valve permitting the operation of automatic brakes on train.

The diameter and stroke of the internal combustion six cylinder engine is 11 in. and 15 in. respectively; general design and details correspond to the McKeen Motor Car Company's latest model (foolproof) Type C engine, the im-



Drawings Showing Interior and Elevation Views of New Gasoline Switching Locomotive.



Gasoline Switching Locomotive Manufactured by the McKeen Motor Car Company.

portant efficiency, reliability and economy developing details of which are—increased water circulation around valves and cylinder heads; Tungsten steel valves; piston triple rings; special compound hardened cams; faultless magneto; water jacketed intake pipes; enclosed fly-wheel, crank case and cam shaft, water and air pumps driving mechanism; combination splash and automatic lubricating system, all gears of the herringbone type.

Among the new characteristics is the use of two exhaust pipes, which extend through and above the roof. The engine is equipped with an air reversing mechanism which adds materially to the convenience and ease of the motorman. Two 5 in. air compressors are attached to the engine crank shaft, in addition there is an auxiliary air compressor in the cab for emergency service.

The ends of the front or main driving axle and rear driving axle have counterbalance crank discs which are connected by side rods.

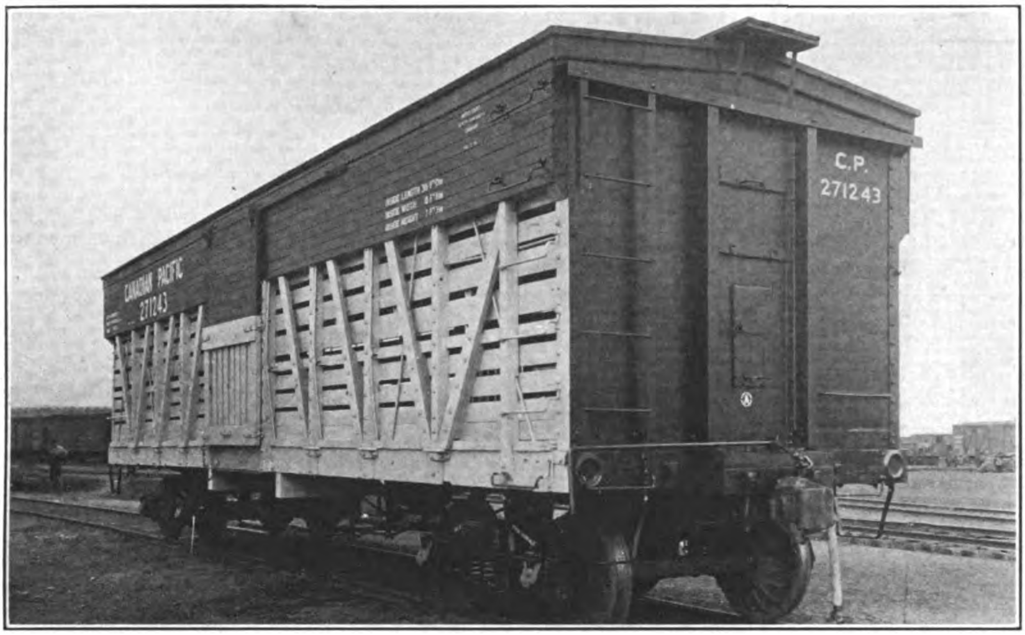
The power transmission, pneumatically operated, is effected by means of sprocket on the crank shaft, through a Morse chain to a sleeve working free on the rear driving axle and is then transferred through a multiple disc friction clutch, from which it is delivered by a Morse chain to the forward driving axle where, by an octoroon clutch the power is either magnified by a series of gears to produce heavy tractive effort and high torque for starting purposes, or is delivered direct to the driving wheels. By thus magnifying the torque of the internal combustion engine great starting effort is obtained for this style of locomotive. At the same time the locomotive once in motion, the higher economy is obtained by cutting out the gears and operating the direct connection.

The Company claims that a steam switching locomotive at many points is an expensive luxury, yet there is no economy in doing away with the switching locomotive and having the work done by freight train engines. The availability of the switch engine is more important than the speed. The steam switching locomotive has the expense of coal, water, sand, roundhouse and turntable service, the engine crew, ground crew, and while standing the consumption of coal and water goes on, for the boiler must be kept hot, in fact in many instances the engine is kept in serviceable condition 24 hours out of the day and frequently only used four or five hours.

Such situations are innumerable on the railroads of the United States, all of which could be put on an economic and efficient basis by the use of the gasoline switching locomotive, whose cost of operation would be in direct ratio to the daily time of service. Its availability for the 24 hours would not cost any more than its availability for six hours. In fact, gasoline switching service in small yards and at local points, etc., could be put on an efficiency basis so that the cost per unit would very favorably compare with the cost of larger units in large terminals where the switching service is operated 24 hours of the day. In other words, at many local stations where the switching is now done by regular freight trains it can be economically and expeditiously handled by the gasoline switching locomotive.

Canadian Pacific's New Thirty-Ton Stock Car.

STOCK car construction, while at all times consisting of considerable variations in design of details such as method of securing the side framing to the side sills, etc., has always followed the same general lines of wooden underframe and decking similar to box cars with side posts and braces similar to box cars but modified to suit the application of heavy slats on the inside only, except that when hay racks are used it is customary to apply sheathing outside hay racks.

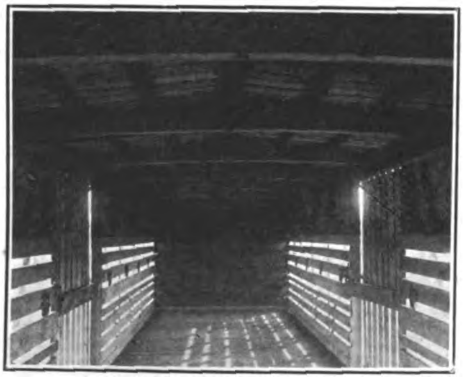


30-ton Stock Car Recently Constructed by the Canadian Pacific.

The fact that so-called stock cars are used for many other kinds of freight, such as lumber, rails, ties, pulpwood, pipe, etc., seems to have been ignored by many designers and builders. As a matter of fact, if a careful check was made on some roads they would find stock cars were used for this class of traffic considerably more than for live stock.

Even though the percentage of this traffic does not run high, the ends of stock cars will, on the average, receive more severe end shocks than box cars, because, with the exception of rails or similar loads of steel, the majority of the materials handled are piled high in the car and some of them, particularly pipe and pulpwood, are slippery, which causes them to produce very heavy shocks, while on the other hand box cars, being used for a greater variety of lading, do not so frequently have a load of this description.

This condition is not taken care of in many designs, some of which have been recently described in railway papers, and for this reason the photos and drawings of the latest type of car built by the Canadian Pacific will be of interest as illustrating how a very substantial end may be easily and economically applied to car of otherwise standard construction. This car is standard design that has given excellent service for some years, except that more recently all the new cars have been constructed with steel centre sills in connection with reinforced ends as illustrated in the drawing to eliminate draft gear troubles.



Interior of Canadian Pacific's 30-ton Stock Car.

The end construction is practically identical with the latest forty-ton steel frame box cars, same consisting of two 5 in. 11.6 lb. Z bar end posts, heavy angle corner posts, a 5 in. 11.6 lb. Z bar end plate securely attached to end post, corner posts securely attached to wooden side plate by means of gussets taking several bolts through the timber. The lower ends of the end posts are connected to the sill plate passing over the top of the wooden end sill and rivetted to the steel centre sill, thereby securely uniting the centre sill construction and end framing. The end lining consists of 2⅝ ins. T. & G. pine or spruce for a distance of four feet above flooring with 1¾ ins. thickness the balance of the height.

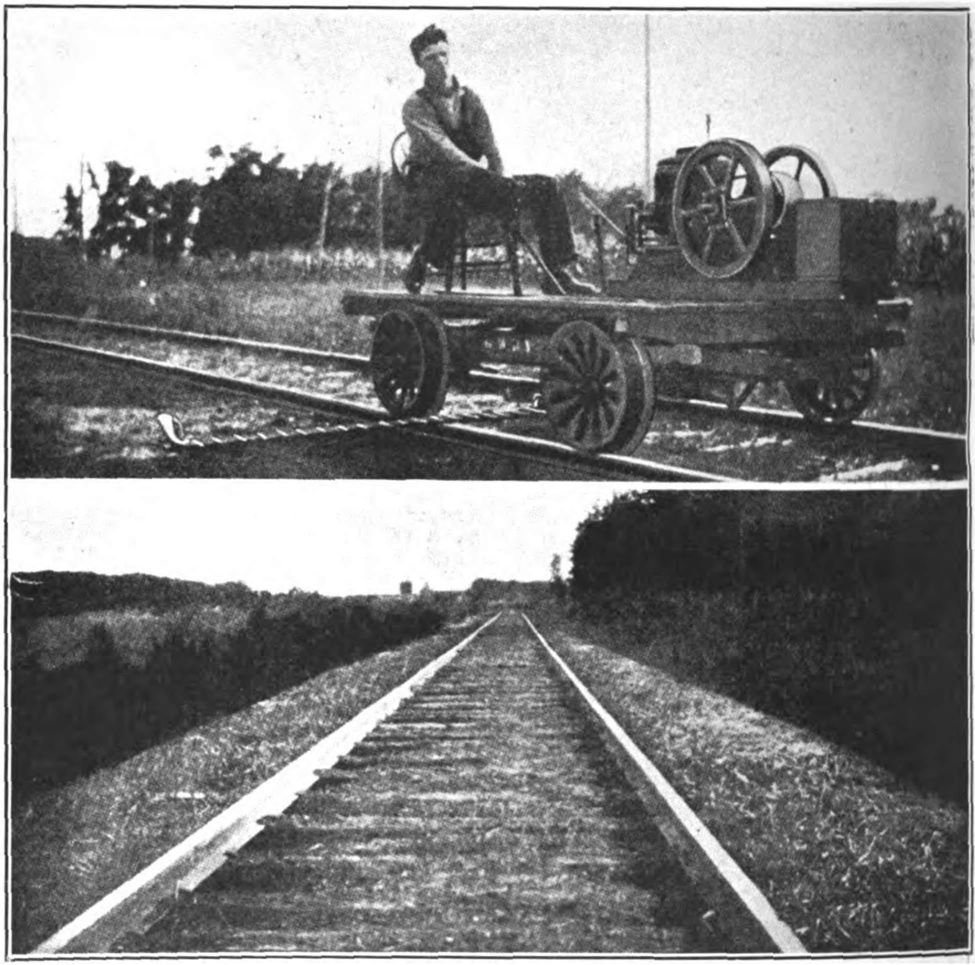
This construction produces a car that is economical in first cost and will satisfactorily withstand usual service conditions either for stock or other service and if damaged in accident can be easily and cheaply repaired.

The last order of these cars were equipped with socket castings inside of slats to support temporary decks. This temporary deck is so designed that if similar castings are applied, the same deck will be interchangeable in any 36 ft. car. When these castings are applied to a car, the sheathing board immediately below fascia is removed to provide ventilation for lading carried in upper deck. This alteration does not show in the illustration as the photograph was taken before the board was removed.

A Track Mowing Machine.

THE Chicago Great Western has recently been experimenting with a track mowing machine which has been constructed by one of its section foremen. This machine will mow a strip of from six to eight feet in width along the track and has affected a remarkable saving in work of this character. As indicated in the illustration, parts of a standard mower were mounted on a push car and the mowing device as well as the car were belted and geared to run with a 2½ H. P. gasoline engine placed on the forward end of the car.

The machine can be run at a speed of about four miles per hour and has been run twenty miles on one gallon of gasoline, so that the cost of mowing a mile of track has been reduced considerably more than one-half. The machine does more even and better work than men ordinarily do with scythes.



A TRACK MOWING MACHINE EMPLOYED BY THE CHICAGO GREAT WESTERN RAILWAY. LOWER PICTURE INDICATES THE RESULTS OBTAINED BY OPERATING THIS MACHINE.

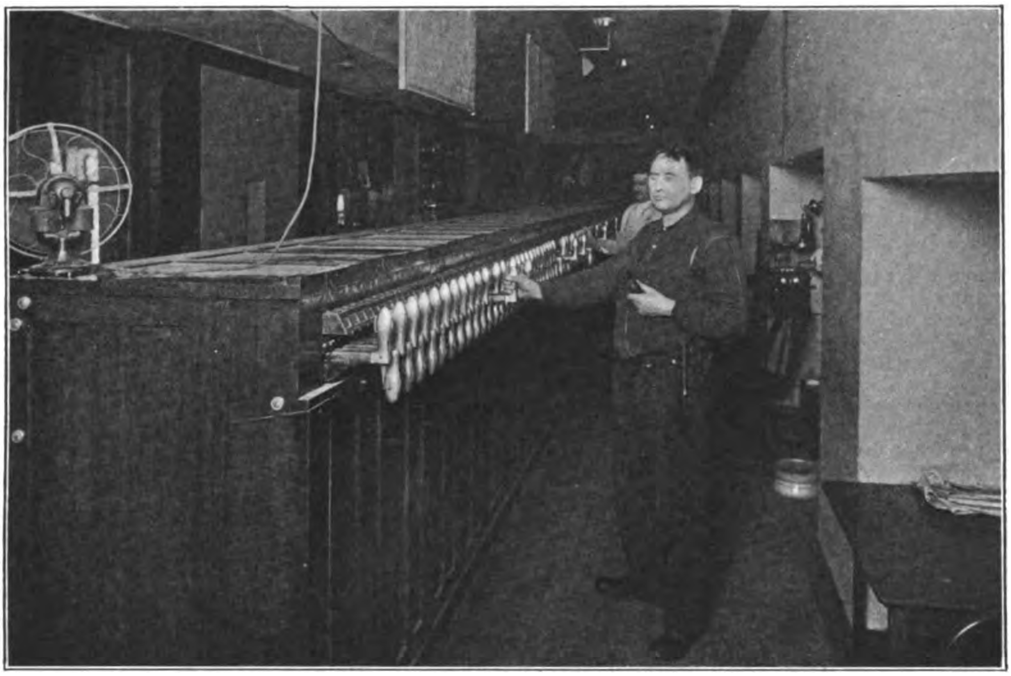
Electrical

The Electric Interlocking Signal Tower at Grand Central Terminal.

ELECTRICITY is becoming more and more of a factor in steam railway operations. Not only is progress being made in the propulsion of trains by this means, but its use is constantly being extended in the operation of these trains.

A striking example of its usefulness in this connection is illustrated by the wonderful electric interlocking signal towers "A" and "B" located at the Grand Central Terminal, New York. These towers represent the twentieth century idea in the electrical control of trains and they are responsible for the movement of hundreds of trains over the maze of tracks into and out of this terminal.

This remarkable, electrically operated yard, is



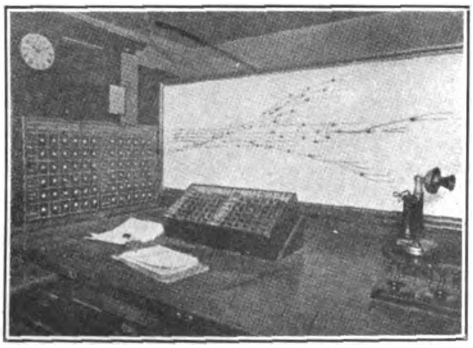
Electric Interlocking Signal Tower, Grand Central Terminal.

the largest thing of its kind in the world and to the perfection of its operation is committed the safety of millions of passengers each year.

In the old days it took an army of men to throw switches by hand in the terminal yards. Now three or four men pacing to and fro in front of a long row of little handles set the interlocking switches and the signals.

The machine is enclosed in an oak case 80 feet long, 5 feet high and 3 feet wide. Inside, but concealed from view, is a maze of electric wires—slender cords that resemble the seeming tangle at the back of a big telephone switchboard. In front, breast high, is a double row of metal handles, 400 in all, each with a straight grip a hand's breadth long, one up and one down alternately.

Over at one side of the room, about half way down its length, sits the tower director and close at hand are the various appliances for receiving and dispatching trains—telegraph, telephone, telautograph and a box containing electric bulbs to indicate the movement of trains to and from adjoining towers. On a frame of ground glass in front of the director is etched a map of tracks in the terminal, spreading out fanwise from the mouth of the tunnel under Park Avenue. A little circle about half the diameter of a dime marks the point where each track branches off.



Where the Tower Director Sits.

As soon as the train "hits the hill"—as they call emerging from the tunnel mouth—the first bulb lights behind the first of these little circles. The tower director knows that the train is coming, for he has been advised of its progress ever since it reached High Bridge or Mott Haven junction and knows just what he is going to do with it, just where he is going to place it, as soon as it gets within his reach. The tower director looks over to the men standing before the long row of handles and says, "124" or "53."

Each handle has a number above it. The man who has the number called within his division of the long box pulls the corresponding handle. As he does so he feels a tiny thrill that is the indication that the "high field" motor that controls the switch is doing the work. Then there is a gentle click, which is the second "indication," telling of the release of the armature magnet. A little square of ground glass above the handle is illuminated and shows that the switch and signal are set. Another little circle lights up on the tower director's map, another number is called, and so on until the train or the engine is at the end of its journey.

Should the tower director call a wrong number or should one of the men misunderstand him and pull the wrong lever the electric indicators would show the error at once. Not only that, but that particular section of the interlocking system of switches and signals on the tracks outside would show it to the eyes of the engineer.

Electric Arc Welding.

J. H. BRYAN, of the Westinghouse Electric and Manufacturing Company, delivered an interesting talk before the Western Railway Club on November 17th on: "Electric Arc Welding." After describing the various processes and classes under which such welding is divided, Mr. Bryan had the following to say with reference to its application to railway work:

Among the principal uses of arc welding equipment in steam railroad shops are the following: Flue welding; firebox repairs; frame repairs, and building up of worn parts. Besides these there are innumerable minor uses for the equipment.

General practice varies as regards the best method of welding flues. The time of welding will probably average 15 per hour, although as high as 25 per hour have been reported. This time is for 2-in. flues. Five inch superheater flues are being welded at about one-fourth this rate. It is interesting to note that the flue sheet is found to be in better condition upon removal of flues than is the case where flues have not been previously welded in. This is due to the fact that the welding builds up the sheet around the flue holes to about the original thickness.

Closely related to flue welding is the subject of firebox repairs. The defects to be repaired include cracks in the side, flue, door and crown sheets, leaky staybolts, leaky seams, etc. Also sheets will often be found to be in such condition that repairs are impossible, and it is necessary to put in patches. All of this class of work can be done very satisfactorily by the use of the arc welding equipment. Broken locomotive frames also are very satisfactorily repaired by the use of the electric arc. One railroad (R. F. & P.) reports that it has in service at the present time 65 welded locomotive frames and has had only one failure; this failure was attributed to the fact that the arc weld was in close proximity to one made by another process.

The following figures are taken from records of actual repairs made in a large railroad shop in the middle west at various times, the figures given being a comparison between the actual cost of welding and that of putting the apparatus back into service by methods previously used, either by replacement or by repair of the old parts. The arc welding costs were based on a power cost of 51 cents per hour for the carbon electrode and 17 cents an hour for the metal electrode, together with cost of labor and an overhead charge of 40 per cent. The power costs used are slightly higher than those usually obtaining in shops of this nature:

	Cost of welding	Cost by other methods
Plugging 51 holes in expansion plate, holes 1 in. diam. by ½ in. deep	$2.75	$10.15
Repairing mud ring	6.50	34.57
Cutting four 6-in. holes in tender deck sheet ½ in. thick	1.08	8.35
Welding eccentric strap, broken through neck	1.08	41.28
Repairing mud rings	6.50	24.57
Welding two spokes in driving wheel center	7.98	99.98
Welding cracks in bulkhead in tender tank	2.33	8.00
Welding cracks in side sheets	26.15	31.79
Repairing firebox	134.89	869.58
Building up flat spots on locomotive driver	.40	225.00

No hard and fast rules can be laid down as to the size of outfit required as no two installations will be alike in their requirements, and the matter of selection of apparatus of proper capacity is largly one of judgment and experience. In steam railroad shops installations are usually made of sufficient capacity to take care of not less than four to six operators, and the larger shops can occasionally use even greater capacities to advantage. Where a greater number of operators are to be supplied, however, it is generally found to be more economical to install additional outfits in other sections of the shop where welding is to be done, rather than to put in one large central plant. This is on account of the fact that as this work is usually more or less scattered the cost of line copper becomes an item for consideration.

Electrification Developments on the St. Paul.

CONSTRUCTION work in connection with the electrification of the Chicago, Milwaukee & St. Paul between Harlowton, Mont., and Avery, Idaho, has been resumed. Thus far the poles have been placed for a distance of thirty miles on the 116-mile division between Three Forks and Deer Lodge, Mont., which is the first to be equipped. The company has ordered nine freight and three passenger electric locomotives from the General Electric Company. These locomotives will be of the same construction except that those to be used for passenger service will be geared for a higher speed. The total weight of these locomotives will be 519,000 lbs. each, and the weight on drivers 400,000 lbs. They are to be delivered in October, 1915, at which time, it is planned, the construction work over the entire line will have been completed.

Terminal Improvements

St. Louis Railroads Unite on Centralized Ticket Offices.

WITH two exceptions, the railroads entering St. Louis have adopted a plan prepared by special committee of passenger traffic officers for centralizing their city ticket offices. The plan provides for separate offices for the various roads, seven to be located in a new five-story building to be erected on Broadway between Locust Street and the Boatman's Bank Building; three offices to be located in the latter building, and three in another building opposite, on Broadway. The roads which have not joined in the plan are the Vandalia and the Mobile & Ohio. Plans for con-

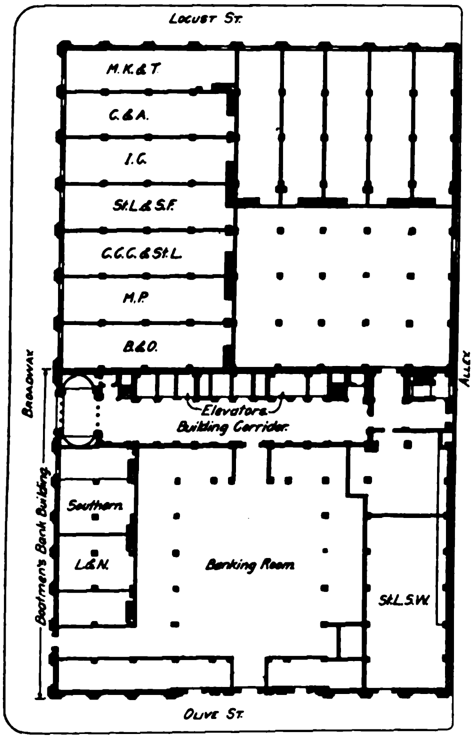


DIAGRAM OF THE CENTRALIZED TICKET OFFICES AT ST. LOUIS.

solidating the down-town ticket offices in St. Louis have been under consideration for several years.

It is believed that the plan will not only be far more economical than having separate offices in various locations, but that it will result in great convenience to the public. It is estimated that the plan will save the roads about $100,000 a year in rentals. After a decision on the location of the building had been reached the apportionment of the offices was made by lot. The Missouri, Kansas & Texas drew the corner of Broadway and Locust Street, which is believed to be the choicest location. The leases of the individual offices will run for ten years. Work on the new building is to begin immediately, and it is expected to be ready for occupancy by June 1st. Arrangements have been made to provide suitable space on Locust Street for such roads as do not have lines into St. Louis as may desire to locate in proximity to the selling offices of the initial lines.

Each of the roads will pay $3,000 a year rental, except that for the corner location, $4,000 will be paid. Two roads now pay $15,000 a year each for the rental of their city ticket offices, and others pay from $10,000 to $14,000 a year.

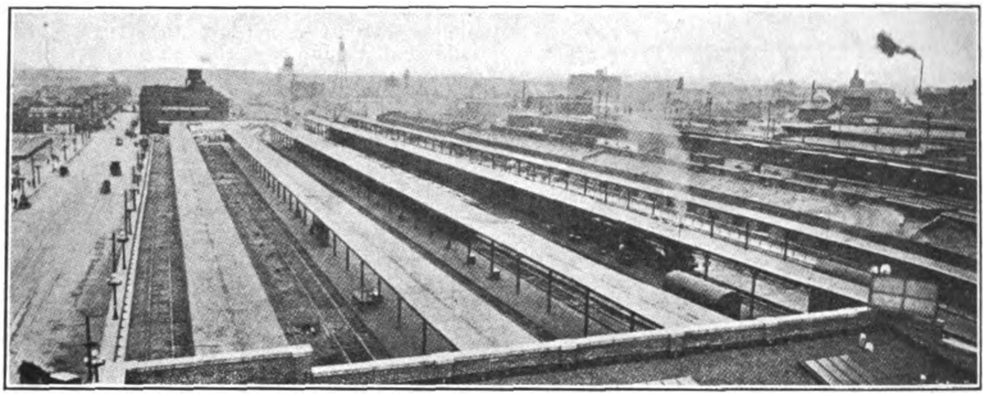
Memphis Railroads Open New Union Passenger Station.

THE Illinois Central and the Yazoo and Mississippi Valley Railroads have opened their new union passenger station at Memphis, the cost of which, including the station building, train sheds, platforms and track elevation, amounted to approximately $2,000,000. The terminal is also to be used by the Chicago, Rock Island and Pacific and the St. Louis and San Francisco roads. The main building which covers a space of 250x150 feet is eight stories in height. The building is of the Roman Doric type of architecture, Bedford stone having been used for the construction of the walls of the first three stories, and brick with terra cotta trimmings for the additional five stories. These latter stories constitute the office portion of the building and are devoted exclusively to offices of the Illinois Central and Yazoo and Mississippi Valley roads. One of the features of the building is an emergency hospital on the fourth floor which is equipped with all modern, sanitary and medical appliances.

The main entrances to the station consist of five large doorways on Main Street, at the sidewalk level, and there are additional entrances on Calhoun Avenue leading directly to the waiting room for colored passengers and to a carriage-way and cab-stand. In addition to these there are separate exits on both streets named for white and colored passengers, so that passengers leaving trains do not need to pass through the waiting rooms. The ticket office, with a frontage of 80 feet, is at the level of the main entrance, and separated by only 30 feet therefrom is the baggage, check counter which is 50 feet long. The concourse is 35 feet wide and 125 feet long and is well lighted and ventilated. The entrance and exit gates to the track platform are another half flight above at the lower end. Another half flight above is the main waiting room and connecting with this room, are the resting rooms for women and smoking rooms for the men.

The track arrangement includes five stub tracks and five through tracks, the stub tracks being used by trains of the roads having a Memphis terminal at the station. Stub track trains are reached directly after passing through the train gates by a half flight of stairs and for through trains the concourse continues, with a width of 25 feet under the through tracks and leading from this extension are half flight stairways for reaching the platforms at the track level. The

THE NEW UNION PASSENGER SATION AT MEMPHIS, TENNESSEE.



General Appearance of the Train Sheds of the New Memphis Passenger Station.

Interior View Showing Concourse of New Union Passenger Station at Memphis.

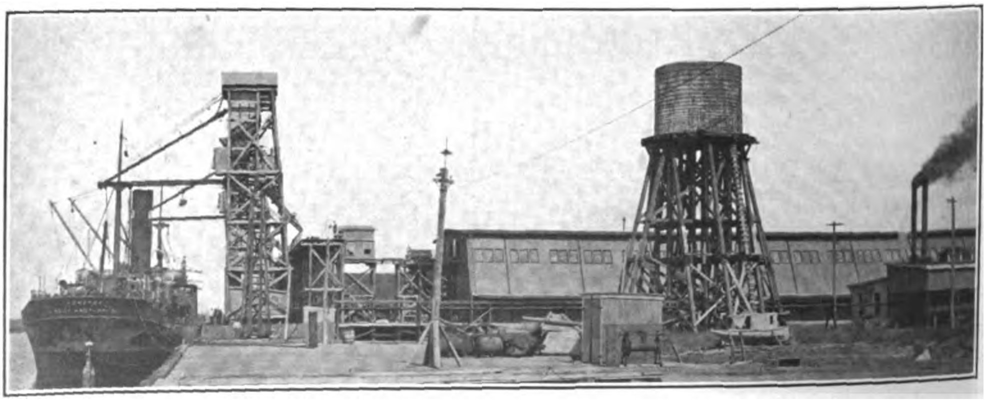
platforms which are seven in number, are 700 to 940 feet long, while two of them are reserved exclusively for trucking, baggage, mail and express so as to relieve passenger platforms of that burden. Umbrella sheds extend over the full width of all platforms and where baggage, mail and express are handled, baggage elevators are operated from the ground floor to the track platform level.

Southern Railway's Improved Shipping Facilities at Brunswick, Ga.

To provide facilities for promptly and economically unloading vessels arriving at Brunswick, Ga., with cargoes of fertilizer material, salt, cement and similar commodities handled in bulk, Southern Railway Company has recently constructed on property adjoining its Turtle River docks and warehouses, a modern warehouse with a complete mechanical unloading plant.

The new warehouse, known as "Warehouse K," is 101 feet wide and 301 feet long and 50 feet high from the floor level to the ridge of the roof, which gives it a capacity for about twenty thousand net tons, equal to 700 ordinary freight car loads. The foundations are of re-enforced concrete and the structure itself consists of a heavy wooden frame, thoroughly braced, on which is placed a corrugated metal sheeting, protected by a composition of asphalt and asbestos. The roof is of wooden sheeting covered with tar and gravel.

The mechanical unloading plant consists of two movable wooden towers, each about eighty-five



New Warehouse at Brunswick, Ga., Which Greatly Expedites the Movement of Bulk Freight.

feet high, which run on steel rails on a wharf in front of Warehouse K, parallel with the water front. An elevated railway, back of the tracks supporting these towers, carries small electric motor cars which move from the elevating towers over scales, which automatically weigh each load, into the warehouse where three tracks allow discharge in the desired compartment. These cars have a carrying capacity of slightly over 5,000 pounds each and receive their power from a "third rail." They are constructed so that each load may be dumped quickly in any one of the specified compartments without stopping.

The material to be stored is raised from the holds of the vessels into the storage bin at the top of the elevating towers by means of buckets holding 3,000 pounds, which are operated by high speed steam hoisting engines especially designed for this work. The operating machinery of this plant is guaranteed to have a minimum unloading capacity per tower of forty tons per hour.

The economy and efficiency derived from the installation of this up-to-date mechanical unloading device is so far superior to the donkey engine and hand car methods formerly in use at this point, and the warehouse itself is so modern and commodious, that these new facilities are expected to attract wide attention to the port of Brunswick, as a point for the most advantageous distribution of the materials, which the warehouse will handle, and consequently prove of advantage to all interior points reached by Southern Railway and its affiliated lines.

Interstate Commerce Commission

Commission Issues Its Annual Report on the Statistics for Railways for 1912.

THE Commission will shortly have ready for delivery, the 25th annual report of the Statistics of Railways in the United States for the fiscal year ending June 30, 1912. Owing to a large demand the Commission reports that it is impracticable to make a general distribution of this report. Arrangements have, therefore, been made by which copies may be obtained from the Superintendent of Documents, Government Printing Office, Washington, D. C., for $1.00 each, or copies of the text for ten cents each. The full report contains 719 pages while the text contains but 65 pages. It is stated as important that any copies wanted be ordered at once from the Superintendent of Documents and not from the Commission, as only a limited edition will be printed.

The report is divided into three sections: Section A including abstract of reports rendered by steam railway companies having annual operating revenues above a hundred thousand dollars; Section B containing abstract of reports rendered by lesser steam railway companies and Section C contains table showing single track mileage and intercorporate relation of steam railway companies on June 30, 1912. In addition, there are two appendices showing mileage and intercorporate relations of switching and terminal companies on June 30, 1912, and also a condensed balance sheet statement of switching and terminal companies.

The Commission's Recommendations to Congress.

THE Interstate Commerce Commission in its report to Congress on the 10th inst. (for the period from December 1, 1913 to October 31, 1914) makes the following principal recommendations as to new legislation:

"That the use of steel cars in passenger train service should be required and that the use in passenger trains of wooden cars between or in front of steel cars should be prohibited.

"That there should be appropriate and adequate legislation upon the subject of control over railway capitalization.

"That there should be legislation to make explicit and certain the authority of the Commission to examine all correspondence, files, indexes and other papers and documents retained by carriers subject to the Act.

"That for the purpose of uniformity and to prevent injustice, there should be provided by law one period—in the Commission's opinion three years—for the beginning of all actions relating to transportation charges, subject to the Act.

"That the penalty for violations of the hours of service Act be changed to a fixed and definite sum, or that a minimum penalty of $100 be established instead of the penalty of 'not to exceed $500,' as now provided."

Various decisions of the Commission carried to the Supreme Court are discussed in some detail with reference to their application to Interstate traffic. On the interpretation of the long-and-short-haul clause the Commission in part says:

"Subsequent to the announcement of the decision of the Supreme Court transcontinental carriers applied to the Commission for a modification of the order which would afford them sufficient time to publish and file with the Commission, effective on statutory notice, new schedules of rates conforming to the requirements of the order. They also urged that changed conditions resulting from increased water-carrier competition justified some modification of the order as to the rates on a limited number of commodities respecting which the water competition was alleged to be particularly severe and to have necessitated relatively low rates. These commodities, comprising approximately 110 items, are said to move in large quantities by water from the East to the Pacific Coast, and the rates which the rail carriers can obtain on this traffic are alleged to be limited and controlled by the rates of the water carriers. The rail carriers urged that as to these items they should be accorded a further hearing to show that they were entitled to a greater degree of relief than was afforded by the Commission's order. Such hearing was held at Chicago on October 6, 1914, and all interested parties were afforded opportunity to present testimony. Tariffs have been filed, effective November 15th, covering all other commodities, more than 400 in number, containing rates that are in conformity with the rule of the fourth section as modified by the Commission's order. The rate from New York City and related points to South Atlantic and Gulf ports and from Ohio River crossings to New Orleans and other Mississippi River crossings were found to be strongly influenced by water competition, and relief was afforded to the carriers operating routes between such points.

"The rates to interior points not located upon navigable streams had in some instances been adjusted by the carriers with relation to the rates to water-competitive points with a view to enabling such interior points to distribute freight in the surrounding country in competition with water-competitive points. The adjustment of rates from many points to Atlanta, Athens, Cordele and Rome, Ga., Birmingham, Ala., Meridian and Jackson, Miss., and other points similarly situated, lower than to intermediate points was intended to permit those cities to distribute in competition with other points located upon navigable waters. The Commission believes such adjustments of rates to be improper under the fourth section of the Act, because it creates undue preference at these points, which are thereby enabled to distribute in competition with other points more favorably located, while intermediate points through which the traffic is carried are charged higher rates and are unable to distribute on equal terms with the points so favored.

"The order entered in these cases denied authority to continue lower rates from Cincinnati or Louisville to Atlanta, Birmingham, Cordele, Athens, Jackson or Meridian than to intermediate points. It also denied authority to continue lower rates via direct lines from New Orleans to the above-mentioned points than to intermediate stations. The interested carriers, in conformity with the order, are making a check of all the rates to all the points involved in this territory. A supplemental report and order 32 I. C. C., 61, has been issued by the Commission, modifying in certain particulars the original order in such a manner as to permit the establishment of a harmonious and properly graded rate structure. This new adjustment is a work of great magnitude and necessitates the reissue of nearly, if not quite, all interstate tariffs in the entire territory involved covering more than 40,000 miles of railway."

The work of physical valuation of the railroads, the report says, is well under way. With the coming of winter, the field parties are being transferred from Northern roads to those in the South. Eight parties are surveying about fifteen hundred miles a month. The number of parties will be increased on January 1st to about twenty for each of the five districts. During the year the Commission has further considered the matter of railroad operating costs. On June 13, 1914, it issued a report which requires Class One roads, embracing carriers whose revenues exceed $1,000,000 per annum, to separate their operating expenses between freight and passenger service on certain prescribed bases. The division of statistics, in co-operation with committee representing the American Railway Association and the Association of American Railway Accounting Officers, is at present at work in devising a plan, the report says, for accomplishing the results contemplated which will not be unduly burdensome to the carriers and which will at the same time yield statistical data of a fundamental character of value alike to the carriers and to the Commission. Upon the completion of this preparatory work a proper order will be entered, it is stated.

State Commissions

Convention of National Association of Railway Commissioners.

THE convention of the National Association of Railway Commissioners was held in Washington, November 17th, 18th, 19th and 20th. The address of welcome was made by Commissioner Clements, of the Interstate Commerce Commission, who laid stress upon the necessity of uniform recognition among the several sets of underlying principles of rate making and rate adjustment, which should be the guide everywhere in arriving at concrete results which will be reasonable and just. "It is manifest," he said, "that in no other way can the just purpose of regulation both state and federal, be accomplished. Divergent and conflicting state policies which become the basis of state rate fabrics, will continue to produce irritating and intolerable conditions of discrimination, for which some remedy will have to be found. I know of no feature or regulation which demands more than does this frank, thorough and courageous discussion and treatment. It cries aloud for co-operative action."

Laurence B. Finn, president of the association, in his address, advocated that regulation and control by authority of state and federal governments should embrace every detail of activities of common carriers, including investments, construction and operation. On account of entangling alliances between transportation companies and other big business industries, common carriers have never had a fair chance to demonstrate their maximum benefit to the public. Legislation to remedy the evil of interlocking directors will become effective October 15, 1916, but in the meantime anxiety of banks, industrial and commercial institutions over welfare of carriers might not be based solely upon their concern in general welfare of the republic. He held that an employe does not lose his efficiency when employed by the government, and that employes of private corporations are not more proficient than those engaged in government service.

"Duplicating a public utility either in construction or operation, which serves the same communities," he said, "results in an economic waste. Therefore, economy demands the elimination of competition between public service enterprises and by force of this economic condition, a monopoly in transportation is necessary. If a private monopoly is indefensible and intolerable, should not a necessary monopoly be publicly owned?"

The report of the committee on railway service and railway accommodations, O. H. Hughes, of Ohio, chairman, declared that "more deaths are occasioned by improper ventilation of train coaches and waiting rooms than by train accidents. The noxious gases that fill coaches, especially sleeping cars, in connection with the peculiar character of dust therein, is most conducive to germ-breeding where proper ventilation is lacking." In regard to the lighting of coaches, the report says that this problem on trunk lines has been fairly satisfactorily mastered, but on many branch lines the dingy, dirty oil lamp is still in evidence. The same may be said of waiting rooms. While giving the railroad credit for progress in lighting and heating coaches, the heating, lighting and ventilation of waiting and toilet rooms is deplorable. The committee recommends a vigorous campaign against this condition of affairs. Determination of the number of trains and their schedules should be made by traffic managers rather than by superintendents, as the former are conversant with the requirements of the public while the latter may not be. Irregularity and failure of suburban trains to arrive and depart on time is the cause of wide complaint. To a limited extent the committee recommends the carrying of passengers on freight trains where passenger trains are so infrequent that time and money could be saved by the use of freight trains. The committee recommends the elimination of the practice of paying freight bills carrying manifest overcharges. Delays in handling and settling claims are also condemned, and the committee concludes that the best means of minimizing such delays is to require the railroads to pay interest on the true claim amount from the date the amount of the claim went into their hands.

While great strides have been taken in the movement to simplify freight tariffs, more remains to be done. Further efforts at simplification should be made by eliminating, as far as possible, technical terminology, abridged language and complicated phraseology. One cause of the car shortage evil is the constant effort to make tonnage records at the expense of speed. The heaviest possible loading is sought and the acceleration of deliveries is wholly overlooked. On the question of substitution of steel for wooden cars, the committee recommends that the Interstate Commerce Commission be given full power to prescribe the character of equipment to be used in interstate commerce.

The report of the committee on statistics and accounts, B. H. Meyer, of the Interstate Commerce Commission, chairman, recited the progress made during the last year in work bearing upon the statistics and accounts of common carriers, notably that of the Interstate Commerce Commission and the State Commissions in Nebraska, Oregon and New Hampshire. Its recommendations are as follows:

"Your committee believes that the various accounting orders of the Interstate Commerce Commission are well adapted to the needs of the State Commissions, and it therefore recommends that the State Commissions adopt them completely. Such adoption will secure a uniformity in accounting not otherwise practicable, and will permit the accumulation of a body of statistics which will become increasingly valuable as the period of years becomes greater. * * *

"We also recommend that the committee on statistics and accounts for the ensuing year be instructed to revise the state forms for annual reports of steam railway companies to conform as closely as practicable to the revised form of annual report to be adopted by the Interstate Commerce Commission."

Chairman Decker of the committee on express service and rates reported that the express companies suffered a loss of approximately $10,000,000 in gross revenues last fiscal year, compared with the preceding year. Operating income was reduced from $4,415,000 to $404,429. These figures, Mr. Decker thought, constitute a basis of apprehension and serious consideration. "In the comparatively near future," he said, "we are likely to have under consideration the question of providing sufficient revenue for a continued profitable operation of the express service over railroads in the United States." At present the express companies pay about fifty per cent of their total receipts to the railroads, a fact calling for an analysis in connection with the continuation of the express service to the public at reasonable rates.

VALUATION.

The subject of valuation was brought before the Association in the second day's meeting in the form of reports from two committees which had co-operated on their respective phases of the question. The standing committee on railroad taxes and plans for ascertaining fair valuation of railroad property has had certain parts of the subject of valuation under consideration; but in addition, at the 1913 convention, a general committee on physical valuation was appointed, which in turn had an executive committee of which Milo R. Maltbie, of the Public Service Commission, First District, New York, was chairman.

Mr. Maltbie, reading a report on the work of the general committee, stated that that body had held four conferences in Washington during the year and has been able to advise the valuation department of the Interstate Commerce Commission in the work of appraisal recently begun by that department. As valuation work has already been done by several of the state commissions, the committee felt that it was entitled to speak with considerable force. The committee took the position that the department of valuation should report to the Interstate Commerce Commission "the vital and fundamental facts necessary to a complete appraisal, but should not attempt to settle the questions of public policy, finance and law that are involved. These must be settled by the Interstate Commerce Commission, and if the department of valuation were to prejudice them, and if the department were not in accord with the Commission, much of the work done by the department might be useless or subject to extensive revision."

Inventories, the committee believed, should be prepared by the railroads which should submit to the department of valuation complete lists of all property. "Every company," says the report, "ought to have such an inventory. It appeared at the start, however, that the railroad companies did not have complete lists, that in many instances even the records of their real estate holdings were incomplete and that none of them had a full set of maps showing in detail the nature and amount of construction work that had been done upon their right of way."

The committee held that an inventory is entirely separate and distinct from an appraisal; that no common date can be fixed for all inventories, and that the only practicable method "is to use a date at the end of a fiscal year and then to direct companies to keep their records in such a way that the inventory may be brought up to date at any moment without such a long examination as is necessary in case of an original inventory of appraisal."

As to abandoned property, the word "abandoned" should not be taken too literally, because, for instance, a circuitous right of way for which a more direct line has been substituted could not be classified as abandoned property if the company retained title, even though the land were not used for any company purpose.

In regard to the appraisal of land owned by the companies, the committee suggested that the Interstate Commerce Commission obtain: 1. A complete inventory of all land owned, showing separately that used and useful wholly for railroad purposes; that used and useful partly for railroad purposes; that used for other than railroad purposes, and that not used for any purpose, care being taken in all cases to show the extent of use. 2. The original cost of land and the form of compensation. 3. Land donated or granted by public authorities and the conditions of such grants. 4. Bequests of land from other sources and the conditions. 5. Extent of structures upon land when acquired, destroyed or utilized, and how utilized. 6. Date of acquirement and dedication to railroad use. 7. Special assessments, such as for sewers, streets, parks, etc. 8. Legal fees and other expenses connected with acquisition. 9. Amount of land sold or conveyed to others. 10. Compensation received in such cases. 11. Date of such sale or conveyance.

The source of funds was also regarded by the committee as of great importance, and the department of valuation should have knowledge of the extent to which property has been paid for by the issuance of securities or out of surplus income or out of operating expenses. If a company has included in its operating expenses items which it now asserts are part of its capital investment, it is an error. The extent to which the public, either through governmental aid or through associations and individuals, has donated property or contributed funds to railroads, should clearly be shown. In this connection, the committee pointed out that the Interstate Commerce Commission, in its new system of accounts, provides that the entire cost of a piece of property shall be charged to capital account and that any donations made toward such costs shall go to profit and loss account and thus become immediately available for dividends. This, the committee holds, is erroneous, as the company would be entitled to charge rates based upon the cost as shown in the capital account, and in this way would get a fair return "not only upon the investment of the company, but upon the amount of money which had been contributed to the company by the public. Why the stockholder is entitled to dividends which have not been earned, and the public required to pay a return upon their own donations, is not explained."

John M. Eshleman, of California, chairman of the committee on railroad taxes and plans for ascertaining fair valuation of railroad property, read the report for that body. The report called attention to the work done by the President's Conference Committee appointed by the railroads to co-operate with the Interstate Commerce Commission in the valuation work.

"It may well be expected that nothing will be left undone by the representatives of these great enterprises to bring about a valuation as favorable to their contentions as is possible. It is plainly apparent that the carriers do not consider that the effect of this valuation work will be seen alone in rates but it is also quite likely that a basis of valuation for possible sales to the government may be contemplated," said the report.

"It is our belief that the work mapped out in the statute directing the valuation is impossible to be accomplished in its entirety, but we further believe, proceeding under this statute, the Interstate Commerce Commission will develop the difficulties of the plan. While we are not pessimistic as to the value of this work, still we believe it will not meet with the expectations of those who framed the statute under which work was undertaken. And we most strongly urge the necessity, both on the part of the Interstate Commerce Commission and the states, of being awake to the program of the carriers involved to lay a foundation for proceedings in court which may utimately vitally affect both regulation, while regulation exists, and public ownership should the government find it necessary to enter into the ownership of the railroads of this country."

The committee alluded to the inventory and appraisal forms which call for entries in three columns headed "Original Cost to Date," "Cost of Reproduction New" and "Cost of Reproduction Less Depreciation." The committee suggested that clean cut definitions of these three terms be made to avoid confusion. It suggested that inasmuch as the tentative valuations made by the Interstate Commerce Commission must be submitted to the governors of the states in which the property valued is located, that copies of the field notes made by the commission's representatives should be furnished to the representatives of those states as well as the railroads.

TELEPHONE AND TELEGRAPH RATES.

The report of the committee on telephone and telegraph rates and service, A. P. Watson, of Oklahoma, chairman, discussed the question whether from an economic standpoint public service commissions should approve the theory of regulated monopoly or that of open competition in utilities of the same character. It is believed that with properly controlled monopolies, the greatest possible reduction in rates, due to the greatest efficiency of plant, is within reach.

UNIFORM CLASSIFICATION.

The report of the committee on uniform classification and simplification of tariffs, Clifford Thorne, of Iowa, chairman, was in abstract as follows:

While appreciating the many advantages of uniformity in classification of ratings, the committee suggests careful consideration of the cost of such uniformity. If it is to be obtained by a general revision upward, the committee doubts the general feasibility of the movement. It would be much better to sidetrack the movement than to pile up a large annual tax upon the public in order to pay for it. The country's transportation fabric has been built up piece-meal. Commercial conditions have adapted themselves to it, and we are now paying the penalty of haphazard growth. Entire uniformity cannot be secured in one year or several years. While thoroughly appreciating the right of individual states to retain full jurisdiction over intrastate traffic, the committee believes that the states should materially aid in the work of uniformity by adopting, whenever practicable, the general classification of the territory in which each state is located. Much confusion is caused by innumerable tariffs applicable to the same traffic, and one state is cited where in order to cover interstate traffic, it requires more than 20,000 tariffs and supplements.

Many complicated questions arise in the work of simplifying tariffs. Group rates, when fairly adjusted, are desired by shippers, but in making group or zone rates conflicts develop with existing combinations of local or through rates. Some progress in the simplification of tariffs is being made, but at times it seems disappointingly slow. Attainment of a uniform system must come through patient and persistent effort and gradual changes. Hasty or ill-advised steps would create confusion and hardship.

The committee especially recommends the plan for simplification of class ratings devised by E. E. Williamson and W. B. Barr. This contemplates the basic rates, all others being computed by a percentage applicable to the basic rate.

There is no reason, in the committee's opinion, why substantial uniformity in rules, regulations, minimum weights, description of articles and package requirements should not come within a very short time as to the general features of classification. Uniformity in ratings is another matter, with many additional problems, and this subject should be left to the judgment of the Interstate Commerce Commission. If such power is given to the Commission, neither the State Commissions, the railroads, nor the public generally will seriously criticize careful, conservative action as to rates.

The committee recommends the readoption of the resolution passed by the association last year and two years ago, that there should be appropriate legislation by Congress, authorizing and directing the Interstate Commerce Commission to frame and promulgate a classification of freight to apply uniformly over the United States.

Rails and Equipment.

The report of the committee on rails and equipment, C. C. McChord, of the Interstate Commerce Commission, chairman, approached the subject from the standpoint of accidents. The committee had analyzed the reports of train accidents for ten years from 1904 to 1913 inclusive. During this time there were 127,371 train accidents caused by collisions and derailments on steam railroads; responsible for 8,805 deaths, 127,542 injuries and a property loss of $104,625,897. The collisions numbered 62,082 and were responsible for 5,078 deaths, while the derailments numbered 65,291 and were responsible for 3,727 deaths. The property loss was $47,433,501 in the case of collisions, and $57,192,596 from the derailments.

Of the derailments, more than 66 per cent were caused by defective roadway and equipment, and the reports show that derailments are increasing each year. Defective equipment was responsible for 45.65 per cent of all derailments, for 13 per cent of the fatalities, 16.13 per cent of the personal injuries and 41.93 per cent of the property losses. For the last year (1913) these proportions were generally larger, defective equipment being charged with 48.13 per cent of all derailments; 14.67 per cent of the fatalities; 19.06 per cent of the personal injuries and 41.19 per cent of the property losses. In that year car wheel failures were responsible for 28 out of every 100 derailments due to defective equipment and for 36.74 per cent of the fatalities thereby occasioned.

The committee had made a careful inquiry into the cause of rail failures and finds that they occur mostly during the winter months, reaching a maximum in February. It has been the experience of a number of roads that the maximum of failures occurs when the rails have been from three to four years in the track. The committee complained of the barrenness of relevant data on failed rails and urged the importance of collecting information from examinations of the fractured rail ends by experts.

On the subject of steel cars the committee declared: "There can be no doubt that steel cars are better and safer than those of wooden construction. Experience in collisions and derailments in which direct comparisons have been made furnishes abundant proof on this question." The committee added that the construction of wooden passenger cars has practically ceased. On January 1, 1914, there were under construction a total of 3,144 cars, of which but 15 were wooden passenger cars and only two of these were intended for the use of passengers. The following table shows the distribution of steel and wooden cars throughout the country:

Section:	No. of Roads	Steel No.	%	Stl Undfr No.	Wood No.
New England	8	105	2.1	153	5,033
East	64	3,767	26.3	1,430	14,287
Southwest	50	235	4.9	681	4,786
Northwest	28	355	9.7	154	3.662
Southwest	38	389	12.0	332	3,228
West	38	2,526	27.2	2,230	9,281
Sleeping Car Cos...	1	2,115	49.4	*628	4,283
Total U. S.......	227	9,492	21.3	4,608	44,560

The committee in conclusion remarked that there has been a noticeable increase from year to year in the loads to which rails and equipment have been subjected, and the increase is still going on. In no other situation involving danger to life, says the report, "is material used with so slender a margin in strength, judging from the annual statistics of accidents." In comparison with other engineering uses of materials of construction, "knowledge of the working stresses in railway materials is in a very backward state. In fact, it is hardly apparent that diligent efforts have been made to supply this deficiency." The committee suggested consideration of the question whether there should be some state or federal supervision of this class of material which is exhibiting so many failures.

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*Wooden cars reconstructed with steel underframes.

RATES AND RATE MAKING.

The report of the committee on rates and rate making was read by Prof. E. R. Johnson. Earnest efforts continue to be made, the report stated, to discover a practical and rational standard to apply in the elaboration of rate schedules, and in passing upon the reasonableness of rates against which complaints are made before public service commissions. It is not probable that the majority of students of this question have as yet agreed upon any single basis or standard that may control in rate making. While rates continue to be made by the carriers and to be passed upon by regulatory commissions by the exercise of individual judgment, rather than by the application of any accepted formula or standard, there are two very noticeable present tendencies in the theory and practice of making and regulating rates: to give greater weight to cost or service in rate making and to recognize a close relationship between railroad securities and railroad rates. One member of this committee is of the opinion that cost of service can be and ought to be made the basis of transportation charges. This member recently expressed his views in a letter to the chairman of the committee, in the following language: "My position is that the cost of service can be fairly accurately ascertained, and that it should be ascertained, and that this cost should be modified by the value of the product graded and classified, and by such other commercial conditions as may affect each particular case. I have made rates on this basis for several years and I find that in the long run it is the safest basis to pursue. Of course, I realize that apportionments cannot be made with absolute accuracy. On the other hand, I find that they can nearly always be brought within five per cent of where they should be. In view of this it seems to me that the cost method is not only safe but necessary." The committee maintained that this testimony by a man who has had years of experience in rate making, is of great significance, and declared it to indicate that the cost basis of rate making has less practical difficulties than most transportation students have associated with that basis. If one expert can apply the cost basis without difficulty to the problems of rate making, the committee said, doubtless others can, and it is possible that the cost principle may find increasing acceptance year by year.

The committee referred to the proposed federal regulation of issues of railway securities. In this connection the report said: As long as it was the generally accepted belief that there was little, if any, connection between the volume of securities issued by the railroad and the rates that it charged, the relation of railroad securities to rate making was considered by many persons to be an academic question; although the public generally has always felt that in some way or another the railroad would try to secure from the rates charged enough revenues to pay interest on all the bonds issued and to give the stockholders dividends upon the outstanding capital. As a matter of fact, the rates actually made have been determined both by competitive or commercial conditions and also by the pressure exerted upon railway managers by the fixed charges which railway companies have to bear. Whatever may have been the past theory as to the relation of rates to capitalization, it is now strongly urged by the carriers that they cannot issue securities to secure necessary addition to capital without increasing rates; and the argument of the carriers seems to be meeting with the approval of many classes of business men. The relation of rates to railroad securities is becoming a very present question. The problems of rate making must be considered jointly with the capital requirements of railroads, and with the policy of the public as regards the regulation of railroad securities. Rates are no longer controlled solely by extra-human competitive forces. It is recognized by everybody that rates and revenues are now largely influenced by the theory and practice of the public officials vested with the authority to prescribe or revise transportation charges. This fact makes it increasingly important that serious students of transportation should endeavor to agree upon practical and equitable standards or bases of railway charges. Unfortunately this committee is unable to solve this question which has long vexed both traffic managers and railway commissioners. Little by little, year by year, the problems of rate making will be worked out by the practical experience of railroad officials and railway commissioners.

The report of the committee on statistics and accounts of electric railways was read by Dr. F. A. Weber, statistician of the New York first district commission, chairman.

MR. PROUTY ON VALUATION.

Charles A. Prouty, director division of valuation, Interstate Commerce Commission, delivered an address which was in the nature of a report upon the progress of federal valuation and the developments in connection with the work. "Probably the most important practical question before this country to-day," said Mr. Prouty, "is its treatment of our railroads, and I have felt that this valuation which we are to make must have a profound influence upon its discussions. There is, first, the primary question: Is the government to take over these agencies of transportation, or shall they be left to the operation of private capital? This question never can be satisfactorily answered in the minds of most people until we know what relation that actual value bears to the present outstanding securities. A definite answer to that question, one way or the other, will undoubtedly profoundly affect public opinion upon this question.

"Assuming that we are to leave the discharge of this function to private enterprises, there arises the even more difficult question as to what the treatment of this private capital shall be. What rates shall be accorded in order that the present investment may be fairly dealt with and that such further investment will be induced as will render possible the proper development of these facilities. In the past this question has not been acute, for rates have been sufficient to maintain railroad credit, but it is evident that the time is at hand, if it is not already here, when there is grave doubt as to whether these rates must not be generally increased. This question cannot be satisfactorily answered until there is a national valuation of these properties."

"When completed, the national valuation should be as far as possible a finality," said the commissioner. "When once this valuation is made, the law requires the Commission to keep it good from year to year. If the purpose of the act is carried out, it will be possible in a half century to turn back in the files and ascertain the exact condition of each railroad fifty years ago.

"It has been too much the fashion in the past to assume that whatever was required of a railroad cost nobody anything," he said. "The error of that notion is fast becoming evident. It is becoming plain that somebody has to pay, and that somebody is, in the last analysis, the general public. In these times, when carriers are insisting that rates must be advanced, and when they are supporting that claim by a showing which at least makes all of us stop and think, we are extremely reluctant to squander several million dollars in a mere duplication of work, if that could be avoided." Mr. Prouty then explained some of the plans for valuation, which, it is hoped, will eliminate duplication of work and result in a fair division of expense between the government and the carrier.

"The Commission has not yet determined the relation between present value and reproductive value," he said, "nor has it determined what value is to prevail in the final valuation of the property itself. A very sharp difference of opinion will undoubtedly be found here between the carriers upon one side and you gentlemen of State Commissions on the other, but that question has not yet been considered by the Commission, nor is it yet ripe for consideration."

The speaker described the work of the accounting department, which is headed by a supervisor of accounts in general charge of the work, with a district accountant in each district. It is the aim of this department to develop the financial history of the property, what has been received from the sale of stocks and bonds—in short, what has been actually paid in to the company from the outside, what return has been paid upon these amounts in the past, and what relation they bear to the outstanding capitalization of the company and to its reproductive and investment cost. "The great doubt," he said, "exists as to what we ought to attempt as to 'original cost to date.' The act requires the Commission to show with respect to each piece of property exactly what should be done in obedience to this requirement of the statute. * * * I had never seen until I read the report of Mr. Eshleman to this convention the definition of the California Commission of 'original cost to date.' I had, however, from discussion with our people and reflection, reached substantially the same conclusion embodied in that definition as I understand it. Were it possible to go back to the beginning and to re-write the accounts of a carrier down to the present time the property account of that carrier, as thus shown, would be the original cost of its property to date."

He said the accountants had endeavored to do this, but that the work was so voluminous and expensive, as well as difficult, that a simpler plan had to be evolved. It is possible, however, he said, to a considerable extent to show the original cost of lands, and there are peculiar reasons why the original cost of the right of way should be known. The Commission certainly should attempt to obtain such information in case of lands and rights of way, certainly when used for common-carrier purposes. It is also possible, he said, to show the original cost of rolling stock with considerable accuracy and to determine the cost of any subsequent additions as should properly be treated as betterments. The division also, he said, will be able to show the total money investment in the property, and this is, perhaps, after all, he thought, the most significant thing.

As to the probable cost of the valuation work, the speaker said his original estimate was approximately $50 a mile to show the cost of reproduction and the cost of reproduction less depreciation in the manner in which the work should be conducted. He saw no reason to change that estimate, provided the work can be done in a fairly economical manner.

"What must be expended in our accounting work depends entirely upon the extent to which that work is carried. The work is necessarily expensive and of great interest and value, but I have never felt that the outlay need be excessive. Whatever the amount needed to complete this work in a proper manner should be expended. * * * In this valuation work no penny should be expended in unnecessary detail, but the work should be done in such manner as will not only commend itself to the judgment of you and me, but in such a way as will also satisfy the average intelligence of this country as correct. It should be done once for all, if possible. This is the economic thing, both for the carrier and for the government.

"Consider for a minutes the enormous amounts involved. An error of six to seven per cent in the valuation of our railroads means nearly or quite a billion dollars. The interest at six per cent upon that sum is sixty million dollars. Whether this valuation is to be used as the basis of rates to be allowed these carriers and paid by the body of our people, or whether, perchance, it may become the measure of the price to be paid by the government for this property, that error would mean either to the railroads or to the people every year three or four times the total amount of the entire valuation. Certainly we should all insist, first of all, that the work be done in a proper manner, and that it be not impaired in quality for the purpose of reducing the expense."

The election of officers resulted as follows: President, Clifford Thorne, of Iowa; First Vice-President, R. B. Prentis, of Virginia; Second Vice-President, Max Thelen, of California; Secretary, R. Hudson Burr, of Florida; Assistant Secretary, James Blaine Walker, of New York.

Amendment of Act to Regulate Commerce.

On Thursday, the committee on an amendment to the act to regulate commerce, Chairman William D. Williams, of Texas, offered a resolution which would preserve the integrity of states in rate-making for interstate traffic, and which directly brought up the question as to whether the Interstate Commerce Commission or State Railway Commissions should have the rate-fixing power within state lines. Lawrence B. Finn, of Kentucky, president of the association, and John M. Eshleman, of California, vigorously supported the resolution. They contended that the states were better informed than the general government as to conditions within their borders. Mr. Eshleman laid stress on the contention that the states should be given supreme power in this matter, at least until the Interstate Commerce Commission's powers are increased by Congress to give it competent jurisdiction over intrastate rates. He declared that the Interstate Commerce Commission at present is without the power to fix intrastate rates.

Car Service and Demurrage.

The report of the committee on car service and demurrage, Clyde B. Aitchison, of Oregon, chairman, stated that while the association in 1909 adopted a uniform code of demurrage rules which was subsequently endorsed by the Interstate Commerce Commission, it is still far from general acceptance. In a few states the code was opposed by Commissions who held their own rules better adapted to local conditions, and in some states statutes stood in the way of its adoption. Such statutory obstacles can be and should be overcome, the report said. The carriers are not without blame for failure to give the rules wider acceptance says the committee. If the railroads should choose to put them into effect as to interstate business, they can do so merely by publishing and filing the necessary tariffs.

As to reciprocal demurrage, the report says: "The committee sees no reason to depart from the frequently announced opinion of the association that fairness to the shipper demands he be given an effectual, prompt, and adequate remedy for dereliction of duty on the part of a carrier failing to supply his cars reasonably as he orders and needs them, and that such penalty as the law imposes for such failure should be requited as promptly and cheerfully by the carrier as the penalty imposed by law for detention of cars is to be met by the shipper."

Shipper's Claims.

The committee on shippers' claims, James S. Harlan, chairman of the Interstate Commerce Commission, chairman, reported that it had obtained statistics from the Interstate Commerce Commission which reflected, to some extent, the progress being made by carriers in the investigation and adjustment of claims. From these statistics, which cover the period from January 1st to June 30th, 1914, steam carriers having annual revenues exceeding $1,000,000, and representing 220,062 miles, or approximately 90 per cent of the total mileage of the United States, reported a grand total of 2,421,996 claims presented, of which 1,895,432 were adjusted. The period of adjustment varied from fifteen to 180 days. At the end of the six months' period there remained unadjusted 529,564 claims, or 22 per cent of the claims received. The majority of the unadjusted claims were presented in the last thirty days of the period under consideration. This shows that 78 per cent of the claims received were adjusted, and of those adjusted 88.6 per cent were paid, 9.8 per cent declined, and 1.6 per cent withdrawn. "These percentages," says the report, "tend to refute to some extent the assertion so often made that carriers purposely evade payment of a large proportion of claims." The total amount of claims adjusted for loss and damage during the six months' period was $17,185,818, and of this amount 43.81 per cent has been charged to two causes, namely, "unlocated loss," 23.96 per cent; and "unlocated damage," 19.85 per cent.

In recent years there has been an abnormal increase in the payments for loss and damage to freight. In 1900 the amount paid on this account was $7,055,622, while in 1913 it was $30,885,454—an increase of 357 per cent. During the same time, freight earnings have increased 109 per cent, showing that the increase in payments for loss and damage is entirely out of proportion to the increase in freight business. In assigning causes for this disproportion, the report mentioned the tendency of shippers to use a cheaper and frailer grade of shipping containers. Public interest requires that carriers insist upon the use of substantial and adequate boxes, cartons, and other packing cases. Another cause is the tendency of carriers toward a more liberal treatment of claims; another that many claims for loss and damage which formerly did not exist are now presented, owing to the increasing practice of shippers to employ men of railroad experience who are quick to find a basis upon which to present claims.

Upon the information obtained, the committee believes that some portion of the large payments for loss and damage is not a proper charge against carriers, especially in the case of claims for alleged losses to shipments of packing house products, grain, fruits and livestock. Uncertainty of the law respecting freight claim liability is cited as among the practical difficulties under which freight claim agents now work. Overcharging and undercharge claims against shippers, the report says, have been accepted as a sort of necessary evil incident to the handling of a large volume of business. The report concludes as follows:

"As a general proposition, carriers adjust overcharge claims with a fair degree of promptness. It appears that all carriers are not as diligent as they might be in their efforts to detect overcharges and to arrange voluntarily to refund them without waiting for a claim, although it is undoubtedly true that there has been a substantial improvement in this respect. There appears to be even greater lack of diligence in the detection and collection of undercharges. It frequently happens that shippers are not advised of undercharges until months, sometimes years, after the shipping transaction occurred. In such cases the shippers, having disposed of the matter, object to paying additional charges, and when informed that under the law they must pay the charges demanded, they feel that they are being imposed upon; and, thereafter, not infrequently assume a hostile attitude both to the law and to the carriers." It is plainly the duty of carriers, said the committee, to make substantial efforts to correct the conditions which create such errors.

State and Federal Authority.

The question of interference between state and federal authority in the fixing of interstate rates was again the subject of debate, on Friday, November 20th. After protracted and at times heated discussion a recommendation was adopted, that Congress enact a law providing that the Interstate Commerce Commission should not interfere with the operation of any state-wide rate or regulation until such rate or regulation had been declared by the courts to be unreasonable. This recommendation was embodied in a resolution proposed by Commissioner William D.

Williams, of Texas. It induced a discussion of the principle involved in the Shreveport rate case. It was held by a majority of the convention that the decision of the United States Supreme Court in that case seriously curtailed the rate-making powers of State Commissions.

Clifford Thorne, of Iowa, new president of the association, insisted that if the commonly accepted idea of that decision should become effective, "state regulation would be dead" and that "all state-made rate schedules would fall like houses of cards." An effort was made to refer the whole matter, involving state rights, back to the committee, with directions to report to the convention next year. On a roll call of states, the motion was defeated, 22 to 11. By an aye and no vote, the Williams resolution then was adopted.

The convention adopted the following resolution: "That property shall not be entered upon the books of account of any company in excess of the actual cash cost." The convention also adopted a resolution recommending the appointment of a committee of three to revise the forms of annual reports made by railroad corporations to the several State Commissions with power to act.

A committee consisting of commissioners from fifteen states was appointed to join in a protest to the Interstate Commerce Commission against the granting of increased freight rates on commodities handled by railroads west of the Mississippi River until they have time to thoroughly examine into the necessity for such increases.

Following a discussion of the pending Reyburn railway securities bill which has been endorsed by the Wilson administration, a resolution was adopted declaring that the federal government should not seek to place its authority paramount to that of the states in the matter of the issuance of railway stocks and bonds. This resolution reads as follows:

"That it is the sense of this association that the issue of stocks and bonds by common carriers and other public service corporations shall be regulated and controlled by governmental authority, but that the regulation and control of issue of stocks and bonds by the federal government shall not be in lieu of but in addition to the authority of the several states in such matters."

The convention adjourned on Friday. It had been decided previously, in fact such action was taken at last year's convention, to meet in San Francisco, Cal., in 1915, the date fixed being October 12th.

Pennsylvania.—The Public Service Commission has issued the following administrative ruling specifying its authority with regard to advances of passenger rates made within the State:

The Public Service Company Law, Approved July 26th, 1913, Article 2, Section 1, (f) Provides in part as follows:

> "To make no change in any tariff or schedule, which shall have been filed or published or posted by any public service company in compliance with the preceding sections, except after thirty days' notice to the Commission and to the public, posted and published in the manner, form and places required with respect to the original tariffs or schedules, which shall plainly state the exact changes proposed to be made in the tariffs or schedules 'then in force,' and whether an increase or decrease, and the time when the proposed changes will go into effect;" * * *

The term "then in force" as employed in the paragraph above quoted must be interpreted as requiring that a tariff or schedule filed and posted must be allowed to become effective and remain in effect for at least thirty days before any change may be made therein, unless specific authority be granted by the Commission, but this will not affect tariffs or schedules containing rates for excursions limited to certain designated periods under authority of General Order No. 4, of 21st day of January, 1914.

New York.—The up-State Public Service Commission has just issued its regular quarterly pamphlet containing abstracts of the quarterly reports made to it by the operating steam and electric railroads of the State. These abstracts contain condensed balance sheets for each company as of June 30, 1914, with corresponding figures for June 30, 1913, and condensed income statements showing not only revenue and expenses, fixed charges, etc., as reported for the three months ending June 30, 1914, but also cumulative income statements for the fiscal year ended on that date.

The pamphlets also contain certain statistical data throwing light on operations during the quarter, such as the amount of freight and the number of passengers carried, ton-miles, passenger-miles, car-miles, etc.

The pamphlet may be obtained on application at the office of the Commission in the Capitol, or at the Commission's New York City office, Room 210, Metropolitan Tower.

TRAFFIC.

Official Classification Meeting.— The Official Classification Committee began a meeting at New York on the morning of December 14th for the consideration of a great number of subjects including changes in ratings, descriptions and package requirements. The meeting is of particular importance as numerous changes in present ratings are under consideration.

The Record of Traffic Through the Panama Canal During the First Quarter Year of Operation.—During the first three months of commercial operation of the Canal, from August 15th to November 15th, the cargo transported through the Canal has amounted to 1,079,521 tons.

During the fiscal year ending June 30, 1914, the Panama Railroad carried 643,178 tons of through freight between the two seaboards, and in the preceding fiscal year, 594,040 tons. From this it is seen that between six and seven times as much cargo is pasing over the Isthmus now as passed over this route when goods were transshipped by rail. The traffic through the Canal in the first quarter of its operation has been equal to about 88 per cent of the through traffic over the Isthmus during the preceding two years.

The toll charge on loaded vessels of $1.20 per net ton, Canal measurement, has been found in this period to be equivalent to a charge of approximately 75 cents on each ton of cargo. The revenue of the Panama Railroad from each ton of through freight during the fiscal years 1913 and 1914 was $3.06. Each through freight train carried an average of 353.21 tons of cargo in the fiscal year 1913, and an average of 302.77 tons in the following year. The average amount of cargo carried on the laden vessels passing through the Canal (in which the 27 vessels which have made the transit in ballast, or are, by nature, not cargo-carriers, are not counted) has been 5,835 tons.

The traffic eastbound through the Canal, or from the Pacific to the Atlantic, and that westbound, or from the Atlantic to the Pacific, are summarized below:

Month	Eastbound *Vessels*	 *Cargo*	Northbound *Vessels*	 *Cargo*	Total *Vessels*	 *Cargo*
Aug.	12	57,182	12	49,106	24	106,288
Sept.	30	186,776	27	135,262	57	322,038
Oct.	41	252,288	43	168,069	84	420,357
Nov. 1-15..	19	124,834	28	106,004	47	230,838
Total ...	102	621,080	110	457,991	212	1,079,521

Over 95 per cent of the traffic may be grouped under these four routes: The United States coastwise trade, the traffic between the Pacific coast of the United States and Europe, the trade of the west coast of South America with the Atlantic seaboard of the United States and with Europe, and traffic from the Atlantic coast of the United States with the Far East.

COASTWISE TRADE.

Eastbound United States coastwise traffic carrying general produce of the Pacific coast to the Atlantic seaboard, has employed the transit of 42 vessels, carrying 250,888 tons of cargo; to this may be added three vessels laden with 14,500 tons of lumber, making an aggregate of 45 vessels with 265,388 tons.

The traffic from the east coast of the United States to the Pacific coast has engaged 43 vessels, carrying 206,482 tons of general merchandise and manufactures, and seven vessels laden with 34,487 tons of coal, an aggregate of 50 vessels, with 240,969 tons.

The coastwise trade has, accordingly, employed 95 vessels, transporting 506,357 tons of cargo. This is 44.8 per cent of all transits, and 46.9 per cent of all cargo.

UNITED STATES WEST COAST AND EUROPE.

Traffic to Europe from the west coast of the United States has consisted of nineteen vessels carrying 136,488 tons of grain, and seven vessels carrying 57,600 tons of general produce, and one vessel with 7,760 tons of gasoline, a total of 27 vessels with 201,848 tons. Traffic from Europe to the west coast of the United States has employed three vessels, carrying 14,603 tons of general merchandise and manufactures.

SOUTH AMERICAN WEST COAST.

The traffic from the west coast of South America to the United States and Europe has included sixteen vessels carrying 111,846 tons of nitrates, of which the ultimate destination has frequently been determined after the vessels left the Canal; one vessel with 6,200 tons of barley, from Valparaiso for Falmouth; one vessel with 5,278 tons of general produce, from Africa to Liverpool; two vessels with 14,900 tons of iron ore from Cruz Grande to Philadelphia; and two vessels with 12,220 tons of general produce, from Valparaiso to Baltimore. The aggregate of this outward traffic has been 22 vessels with 150,444 tons of cargo.

Traffic to the west coast of South America from the United States has consisted of one vessel with 6,010 tons of coal, from Norfolk to Valparaiso; and seven vessels, with 40,746 tons of general manufactures, from New York for distribution between Callao and Valparaiso, an aggregate of eight vessels with 46,756 tons. Traffic from this coast from Europe has consisted of three vessels with 11,350 tons of coal, and two vessels with 5,532 tons of general manufactures, all from Great Britain. The traffic to the west coast of South America has been thirteen vessels, with 63,638 tons.

TRAFFICS TO THE FAR EAST.

The trade from the Atlantic seaboard of the United States through the Canal to the Far East has been comprised as follows: To Japan, three vessels with 17,570 tons of refined petroleum and petroleum products, and seven vessels with 25,258 tons of general cargo and 14,817 tons of raw cotton; to China, four vessels with 24,730 tons of refined petroleum; to Australia and New Zealand, three vessels with 22,498 tons of general merchandise, and two vessels with 12,701 tons of refined petroleum.

The total exportation to the Far East through the Canal has amounted to 117,574 tons, carried in nineteen vessels. None of these vessels has returned to the Canal, and no cargo has been shipped through direct from the Far East to the United States or to Europe.

MISCELLANEOUS.

Only five loaded vessels have passed through the Canal on routes other than those described above. They have been the "Capella," carrying 3,400 tons of whale oil from Magdalena Bay to Norway; the "Kingsway" and the "Burcombe," carrying respectively, 4,659 and 4,550 tons of coal from Great Britain to Esquimault; the "Bankdale," with 5,943 tons of coal from Norfolk for Guaymas, Mexico; and the "Wilhelmina," with six tons of general cargo for the Government of Nicaragua. The five vessels carried an aggregate of 18,558 tons of cargo.

SUMMARY.

The traffic over the several routes may be summarized, as follows:

	Vessels.	Tons of Cargo.
Coastwise, eastbound	45	265,388
Coastwise, westbound	50	240,969
U. S. Pacific coast to Europe....	27	201,848
Europe to U. S. Pacific coast....	4	21,102
S. America to U. S. and Europe.	12	150,444
U. S. and Europe to S. America.	13	63,638
U. S. Atlantic coast to Far East.	19	117,574

Miscellaneous traffic	5	18,558
Vessels without cargo	27	....
Total	212	1,079,521

ORGANIZATION NOTES.

Annual Meeting of Railway Fire Protection Association.—The Railway Fire Protection Association held its second annual convention at the Hotel Raleigh, Washington, D. C., on October 6th and 7th. The president of the organization, F. H. Elmore, superintendent of insurance of the Southern Railway, presided at the various sessions.

The President's address called attention to the preliminary work to which the association's first year had been devoted and noted that the real work of the society, to prescribe the methods of fire protection, had hardly been begun. He emphasized the necessity of co-operation, first, on the part of members in their relations with the various committees, and, second, on the part of the society towards the operating department, expressing the opinion that once the interest and support of the operating officer were secured, accomplishment would be assured. The real work of the society, therefore, he said, lies in devising practical, economic and effective ways and means for the protection of and the prevention of loss to property. Its province is to develop standard practices and to play the part in the railway field that the National Fire Protection Association plays in industry in general; it must prove to the operating officer and to the later association that it is the authority in its branch of the subject.

The report of the executive committee showed that the society had increased its membership approximately 57 per cent, and recommended the establishment of a number of new committees.

The Committee on Fire Hazards, Charles N. Rambo (Norfolk & Western) chairman, presented a report.

Forthcoming Annual Meeting of National League of Commission Merchants.— The 23rd annual convention of the National League of Commission Merchants of the United States, will be held in Detroit, Mich., at the Hotel Cadillac, January 13th to 15th inclusive, for the election of its officers, and for consideration and discussion upon all problems affecting transportation and marketing of fruits, vegetables, butter, eggs, poultry, etc.

The scope of the League's operations and representation extending to 38 of the largest and most important cities and marketing centres of the United States, will naturally make the discussions at this annual meeting of vital interest to all sections of the country. Therefore, its sessions are open to the public.

Resolution of the American Association of Traveling Passenger Agents.—The American Association of Traveling Passenger Agents which assembled in California during October, after having inspected the progress of the work on the buildings and grounds of the Panama-Pacific International Exposition, placed itself upon record as follows:

First.—That the Association is profoundly impressed with the nobility of the scale on which this exposition is planned, and with its wonderful beauty in detail.

Second.—That the Association is struck with the astonishing progress of the work, all the exhibit buildings being completed and the installation of exhibits from the forty-three states and territories and forty foreign countries going on.

Third.—That in the opinion of this Association there is no doubt that the Exposition will be completely ready on its opening date, February 20, 1915.

Fourth.—That in the opinion of this Association the Panama-Pacific International Exposition, in plan and execution, in grandeur and conception, and in beauty of detail in programme and performance, will be commensurate with the great national event which it celebrates, creditable to the nations which celebrate, and an honor to California, the hostess state.

Fifth.—And it is hereby

Resolved, That the Panama-Pacific International Exposition, in educational value, in artistic stimulus, in beauty and in interest, justifies the members of this Association in urging every one who wishes to be abreast with culture to come and stay long at the Panama-Pacific International Exposition.

International Engineering Congress, 1915.—Some confusion seems to have arisen in the minds of at least certain of the engineers of this country, between the International Electrical Congress, which it was proposed to hold in San Francisco in September, 1915, and the International Engineering Congress, which IS TO BE HELD during the same month.

Owing to the unfortunate situation existing abroad, and the impossibility of convening the International Electratechnical Commission, under whose authorization the Electrical Congress was to have been held, it has been decided by the governing body of the American Institute of Electrical Engineers to indefinitely postpone the holding of the Electrical Congress. This does not affect the International Engineering Congress, which goes ahead as originally planned.

Marked progress is being made in connection with the latter, and papers have already been received from several of the foreign countries, and everything points to a successful issue.

The Committee of Management of the Congress wishes to impress upon all engineers of the country its earnest desire for the support of the whole engineering fraternity, and feels that the volumes which will be received by those who subscribe to the Congress will be a very adequate return for the subscription fee.

World Railway Congress Postponed.— On account of the European war, all preparations for the ninth session of the International Railway Congress which was to have been held in the German capitol next June, have been suspended.

The Congress, whose membership consists of governments and companies operating more than half the earth's railway mileage, is perhaps the most important railway association in the world. Its sessions are held every five years, the last having occurred at Berne, Switzerland, in 1910, and take up for discussion and interchange of ideas questions of railway maintenance, equipment and operation which are of importance to the railways of all countries.

At the next meeting the German government was to have acted as host and it was understood that Kaiser Wilhelm himself would open the convention. Many American railway officials had prepared papers embodying the newest methods and ideas prevailing on United States railways, overwhelmingly the world's greatest transportation system, in size almost seven times that of Germany, the nearest competitor. Among these, with their subjects of discussion, are the following:

H. U. Mudge, president, Rock Island Lines, Chicago, on roadbed and track and arrangements to be adopted in view of increasing weight of locomotives and speed of trains.

Epes Randolph, president, Southern Pacific Railroad of Mexico, Tucson, Ariz., on maintenance and supervision of track, and measures to provide economical organization in view of increasing traffic, speed, wages and cost of materials.

W. C. Cushing, chief engineer maintenance of way, Pennsylvania Lines, Pittsburgh, on special steels.

C. H. Cartlidge, bridge engineer, Burlington Route, Chicago, on reinforced concrete.

B. F. Bush, president, Missouri Pacific, St. Louis, on passenger cars and improvements and rules to be made to increase safety and comfort.

Horace G. Burt, chief engineer, Chicago Committee of Investigation of Electrification of Railway Terminals, Chicago, on electric traction in comparison with steam on lines of heavy traffic.

F. A. Delano, formerly president, Wabash and Monon Railways, Chicago, on passenger terminals and arrangements for reducing number of locomotive and empty car movements in terminal stations.

H. G. Kelly, vice-president, Grand Trunk, Montreal, on freight stations, organization to accelerate business and arrangements to simplify switching.

Fairfax Harrison, president, Southern Railway, Washington, D. C., on determination of cost of carrying passengers and freight, considering capital charges, and relation to rates.

Arthur Hale, general agent, American Railway Association, Chicago and New York, on interchange of freight cars and penalties for delay in returning cars.

A. F. Banks, president, Elgin, Joliet & Eastern, Chicago, on workmen's dwellings.

H. B. Spencer, vice-president, Southern Railway, Washington, on special methods of traction on narrow gauge roads.

Previous meetings of the Congress, with the number of government systems and private companies and mileage represented, have been held as follows:

		Govts.	Priv. Cos.	Mileage.
1885	Brussels	19	131	31,000
1887	Milan	26	165	33,391
1889	Paris	34	208	104,360
1892	Petrograd	47	262	128,600
1895	London	43	326	171,385
1900	Paris	48	338	208,534
1905	Washinton, D. C.	44	409	314,962
1910	Berne	48	420	359,057

Recent attendances have approached 1,000 delegates. The German government railways had prepared an elaborate program of entertainment for the visitors.

Pennsylvania Railroad's New Trainmen Congratulated by Management.—S. C. Long, general manager of the Pennsylvania Railroad, has sent the following personal letter to each of some eight hundred employes of different divisions of the railroad, who, during the strike of trainmen on the Monongahela Division in March, April and May of this year rendered such excellent service that the railroad was able to operate trains uninterruptedly, thereby preventing any inconvenience to the public:

"On March 20, 1914, practically the entire force of road and yard freight trainmen on the Monongahela Division, by their refusel to report for duty, when called, severed their relations with the Company.

"In order that the operations of the division might continue, it was necessary to fill the vacant positions with new men. This force had to be organized and the inexperienced men instructed in their duties. Food, sleeping quarters and police protection also had to be provided.

"To attain these results in the shortest possible time, it was necessary that the regular division operating force be supplemented by temporarily transferring to the Monongahela Division, officers and employes from other divisions of the Pennsylvania Lines East and West of Pittsburgh.

"The promptness with which operations were resumed and the success with which the business was handled were most gratifying to the management.

"The general superintendent of the Western Pennsylvania Division has called our attention to the commendable manner in which you participated in furthering this accomplishment.

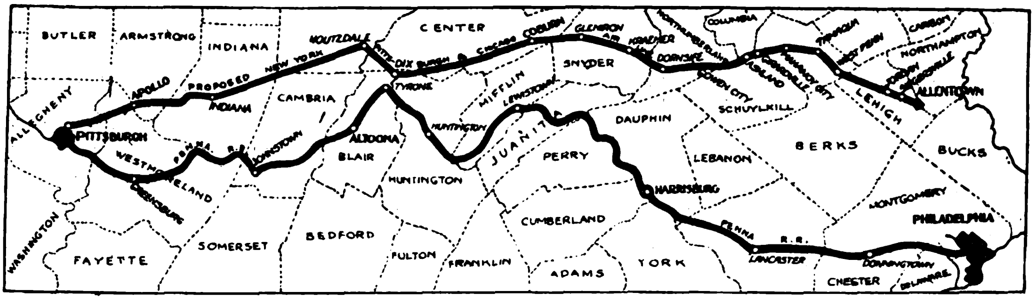
"It is a pleasure, therefore, for me to join with the president and executive officers of our Company in expressing to you sincere appreciation of this practical display by you of that sense of responsibility to the public which every railroad man must share, as well as of your fidelity to the interest of this Company."

CONSTRUCTION.

A New Road for Pennsylvania.—A new railroad is to be constructed in Pennsylvania which it is expected will greatly reduce the rail distance between Pittsburgh and New York. The road, which is the New York, Pittsburgh and Chicago, will run through the central part of the State and has been approved by the Public Service Commission.

The New York, Pittsburgh and Chicago Railroad, with its available assets, was sold at Sheriff's sale on October 31st, and was bought in by Attorney Edward T. Noble, of the firm of Evans, Noble & Evans, who represent the reorganizers of the company. The Harriman estate owns the new company.

It is understood that the new line will run from Pittsburgh to Allentown. Half a million dollars has been spent in surveys and rights of way purchases The new line is surveyed to be 83.7 miles shorter between New York and


BUTLER
ARMSTRONG
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COBURN
GLENIRON
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NORTHUMBERLAND
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TAMAQUA
CARBON
WEST PENN
NORTHAMPTON
ALLEGHENY
APOLLO
PROPOSED
NEW YORK
PITTSBURGH & CHICAGO
DIX
TYRONE
SNYDER
DORNSIFE
GOWEN CITY
ASHLAND
GIRARDVILLE
MAHANOY CITY
ORGIDN
EGYPT
ALLENTOWN
INDIANA
CAMBRIA
MIFFLIN
LEWISTOWN
SCHUYLKILL
LEHIGH
PITTSBURGH
PENNA. R.R.
JOHNSTOWN
ALTOONA
HUNTINGDON
JUANITA
DAUPHIN
BERKS
BUCKS
WESTMORELAND
BLAIR
PERRY
LEBANON
GREENSBURG
HUNTINGTON
HARRISBURG
MONTGOMERY
PHILADELPHIA
WASHINGTON
CUMBERLAND
PENNA
R.R.
FAYETTE
SOMERSET
BEDFORD
FULTON
FRANKLIN
ADAMS
YORK
LANCASTER
DOWNINGTOWN
CHESTER
DELAWARE

Route of the Proposed New York, Pittsburgh and Chicago Railway Across Pennsylvania.

Pittsburgh than any other line. Issuance of 17,000 shares of common stock at $50 par, or $850,000, has been authorized, although the new company, it is said at this time, desires to issue only $600,000 worth, and no provision is made for preferred stock.

The new air line will be built cheaper than a four-track road and can be made into a six-track highway. The grades will be better and a rich, new region in bituminous and anthracite coal and agricultural products will be opened. Connections at the Allentown terminus will be made with one of the Eastern trunk lines.

Canadian and American Engineers to Rebuild the Belgium Bridges.—The rehabilitation of hundreds of railroad bridges in Belgium and France which have been utterly destroyed as a result of the military operations was given as the object of a conference of representatives of the Canadian Pacific, Grand Trunk, Canadian Northern Railways and the Allan, C. P. R. and C. N. R. Steamship lines. The project under consideration is said to mean an outlay of millions of dollars in Canada and the United States and employment for thousands of men.

Those who took part in the conference were: J. L. Perron, solicitor of the C. P. R. and Montreal Tramways Company; William Lyall, of the P. Lyall Company; Timothy Foley, E. T. Foley and O. W. Swenson, of the large St. Paul firm of contractors who helped build the Grand Trunk Pacific; W. F. T. Tye, civil engineer of Montreal, who was engineer of the Ottawa Terminal Company; Patrick Dubec, a Montreal railroad man; C. W. Allan, of the Allan line of steamships; and one or two others.

It was explained that these gentlemen had met to consider the problem of restoring railway communication in Belgium and France. Despatches from the war zone have pointed out the enormous task facing European engineers of replacing bridges in the briefest period and bridge builders are of the opinion that this cannot be done quickly enough by rebuilding from the ground up. The procedure suggested is to transport whole sections of steel bridges from other sections of the country. All of the Canadian and American roads have on hand hundreds of "released" steel bridges, which, it is thought, could be made use of in the war zone.

Opening of the Magnolia Cut-Off of the Baltimore and Ohio.—The Magnolia Cut-Off of the Baltimore and Ohio Railroad, to which reference has been made in past issues of the "Railway World," was opened for traffic on December 6th.

This new double track line between Orleans Road and Little Cacapon, W. Va., is twelve miles long and cost about $6,000,000 to construct. It is one of the largest improvements of the kind ever undertaken, physical conditions and difficulties to overcome making the cost of $500,000 per mile exceptional in railroad construction. A notable feature in connection with its opening is that it was completed nineteen days ahead of the time fixed for its completion by the contract, the work having started eighteen months ago and built within the appropriation.

With the opening of this new line the Baltimore and Ohio Railroad checks off the last item in a budget of improvements commenced five years ago, when Daniel Willard became president of the road, to expand its facilities by providing third and fourth tracks across the Alleghenies, reducing grades, eliminating curves, building and enlarging yards and other facilities and purchasing new equipment, all at an approximate cost of $100,000,000.

The Magnolia cut-off is a part of a four-track system east of Cumberland, shortening the distance between Orleans Road and Little Cacapon by 5.8 miles as compared with the old line. It is almost an air line, first paralleling, then crossing overhead and being benched in the mountain above the old line; and eliminates a grade at Hansrote, W. Va., which required helper locomotives.

The Magnolia cut-off is a monument to the engineering genius of Francis Lee Stuart, who as chief engineer, planned and built this and many other improvements embraced in the Baltimore and Ohio program. Mr. Stuart was chief engineer of the Erie Railroad when that company constructed the now famous Bergen cut-off.

Primarily the cut-off is an essential factor in the economics of transportation, for not only will it save about six miles in distance but it will avoid a summit of the mountains for eastbound traffic and in this way effect an economy in the expense of train operation by doing away with the use of extra locomotives as helpers. The new line is almost straight like the crow flies between Orleans Road and Little Cacapon and eliminate 887 degrees of curvature compared with the original main line which was built along the winding banks of the Potomac River in the days before engineering problems were conquered by such heroic measures. There is practically no grade over the new line. At certain points on the improvement the four main tracks are side by side, while at other places the new line crosses overhead on concrete and steel bridges and passes under mountains through tunnels.

It is intended to operate the cut-off entirely for east-bound freight traffic, because of the economy possible and the further fact that the old line will avoid tunnels for passenger service.

GENERAL NEWS NOTES.

Holiday Greetings from the Denver and Rio Grande.—A holiday banner of a handsome holly and poinsettia design, extending season greetings to patrons of the Denver & Rio Grande and Western Pacific Railroads, has made its appearance in all freight and ticket offices, depot waiting rooms, general offices, dining cars and Pullman sleepers on this system. This method of bringing Christmas cheer to the traveler was first adopted by this road a year ago, and the innovation was received so kindly by the traveling public that it was repeated again this year.

New Emergency Internal Revenue Law as Applied to the Railways.—The provisions of the new emergency internal revenue law in so far as they apply to freight shipments provide that a one cent war revenue stamp be placed on each bill of lading, manifest, or similar memorandum. The shipper must affix this stamp to the bill-of-lading, and the railroads cannot accept and forward a shipment until this is done. Such is the ruling of the United States Treasury Department.

The department has also ruled that where freight is accepted at non-agency stations, it must be receipted for by the conductor accepting it. He must see to it that the stamp is attached to each of such receipts and cancelled as required by regulations before such shipment can be accepted. In the case of perishables or other instances where such receipts cannot be given by conductors, the goods may be accepted and transported in advance of the affixing of the stamp, but in that event the receipt must be delivered to the destination agent and he must require the stamp from the consignee.

To make it even plainer, the law provides that this stamp must be affixed before the railroads can accept a shipment; and in cases of perishables, they cannot deliver the shipment until the stamp is affixed on the receipt and cancelled. The law is penal, not civil. Its violation by any person or corporation is punishable in the Federal Courts.

The shipper or person is required to cancel the stamp, by writing across the face his initials and the date. Some shippers have been under the impression that, because the carriers have a limited supply of stamps on hand for the accommodation of their customers, the stamps were to be distributed by the roads free. This impression is erroneous. The law provides that the shipper pay for the stamp, affix and cancel it.

For the convenience of their customers, a number of roads have distributed a limited supply of stamps to their agents that they may be obtained from the latter, until the Government has completed its arrangements for distributing them through its own agencies. This, however, is simply as above stated, for the temporary convenience of the shipper, as these stamps will be sold at all post offices and it is expected that shippers will obtain their supplies there as the law requires that the revenue stamp for bills-of-lading must be provided by the shipper.

Aside from supplying the stamps, the burdens which fall upon the railroads to see that the law's mandates are carried out, are enormous as will be seen when it is stated that the Pennsylvania Lines East of Pittsburgh alone issue some 50,000 bills-of-lading and freight receipts every day.

PANAMA FAIR NOTES.

The Exhibit of the Union Pacific.—A colossal reproduction of Yellowstone National Park in "The Zone" at the Panama-Pacific International Exposition, by the Union Pacific System, will be a spectacular feature of the great fair.

The sum of $250,000 has been spent in reproducing upon an elaborate scale the glories of the great National Playground. Neither money nor effort was spared to make the reproduction worthy of the original. It was decided that the great scenic beauties of rocky crags and cliffs should not be mere haphazard combinations of wood framework and plaster and paint. Instead, forms were made over real rocks, which were first dipped in plaster of Paris and spread over the rocks, being fitted to every crack and crevice. This was allowed to dry and at the proper time an extra half inch of plaster was applied to the surface. When the whole was entirely dry, the mountain surfaces were raised to the desired position, the perfect outlines of the rocks being preserved. These pieces were placed in a range of mountains that rises high in the air and the whole painted and tinted in nature's colors. Shrubs, plants and moss are added.

Two hundred tons of plaster of Paris, 600,000 yards of burlap, eight tons of paint and 30 barrels of waterproofing were used in the construction of the mountain ranges. The cost of the labor for applying the plaster alone amounted to $25,000.

Entrance to Yellowstone concession is through a canyon with Eagle Nest Rock on one side and Golden Gate Viaduct on the other. A striking feature, after passing through the canyon portal, is the absolutely accurate reproduction in every feature of the Old Faithful Inn at Yellowstone Park. The statement applies not only to the architecture but to the exact size, although the banquet hall was necessarily made three times larger than the original and seats two thousand people.

In front of Old Faithful Inn is the largest relief map in the world, showing every feature of Yellowstone National Park on a measured scale. The map is 230 feet across and the relief shows every peak, river and geyser, the latter steaming and throwing up columns of water. The whole is encircled by a walk upon which visitors may view the map.

Through the mountains runs a trail more than one mile long, flanked with ferns and wild growth. Waterfalls, dropping from a great height, add to the beauties of the scene and great caves can be explored by the more venturesome sightseers.

Within the larger mountains is the Spectatorium, a vast theatre-like enclosure, in which will be shown other wonderful sights of Yellowstone National Park. Old Faithful Geyser, the most wonderful of all the natural phenomena of the Park, will be reproduced with life-like reality, throwing into the air a huge volume of boiling water and steam. This eruption will be repeated every 65 minutes (the same time of the original); eruptions by moonlight, at sunrise, at sunset, in a storm, or with clear sunshine, with all their varied effects, will be produced with hot water, steam and marvellous light devices.

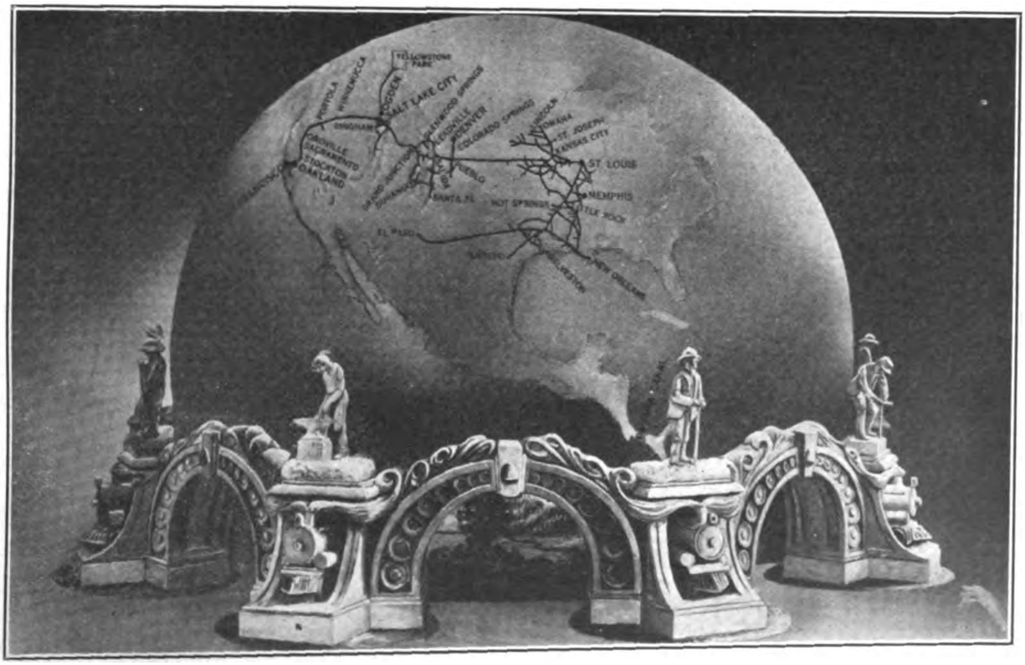
Another feature will be the Official Exposition Orchestra of eighty skilled musicians, under the leadership of a noted director. Concerts will be given in Old Faithful Inn every afternoon and evening.

The Denver and Rio Grande Exhibit at the Panama-Pacific International Exposition.— The first exhibitor in the railway section of the Palace of Transportation at the Panama-Pacific International Exposition, San Francisco, to complete the structure in which its exhibit will be placed is the Denver & Rio Grande System. An immense globe, 44 feet high and 51 feet in diameter, shows a map of North America, with the lines of this system traced from San Francisco to St. Louis. Inside, by means of models, the scenic marvels which have made the road famous are reproduced. The Black Canyon, the Royal Gorge, the Garden of the Gods, Pike's Peak and other of the great mountain peaks, waterfalls, springs, agricultural scenes, industries, and the cities which this system links together will all be faithfully reproduced in the globe and in an annex structure connected therewith. Night and day effects, sunrise and sunset, storms like those one may see collect at the rim and hurtle down a canyon which will be drenched with rain and emerge into gleaming sunshine all in the course of an hour's time, and other spectacular effects will be reproduced by electrical and other devices.

Southern Pacific Activities at the Panama-Pacific International Exposition.—Housed in an imposing two-story structure, seventy feet in height, and occupying in ground space an area almost equal to San Francisco's new million dollar auditorium, the Southern Pacific Company's main exhibit at the Panama-Pacific International Exposition promises to be one of the most attractive on the 1915 grounds. The location is ideal. The Southern Pacific building will be in the heart of the grounds, at the head of Palm Avenue. It will adjoin Machinery Hall and the Panama Canal exhibit, and be at one end of the concessions district.

The architecture of the building will be Renaissance. The front will be set off by a series of Corinthian columns and there will be six entrances, the three main ones being on Palm Avenue. The interior will include what is to be known as the "Sunset Theatre," where visitors will find an abundance of varied entertainment. This theatre will have a seating capacity of four hundred. The Central, or main exhibit room, 200 feet square, will be devoted to a unique and instructive exhibit pertaining to the Southern Pacific Company's business. While the specific nature of this exhibit has not been revealed, the promise is made that it will prove an exceptionally interesting and instructive one both to the Pacific coast resident and to the visitor who comes out here from other climes. Between the entrances and the exhibit sections, there will be spacious and highly decorative lobbies.

The company has stipulated with the exposition people to reserve between thirteen and fourteen



THE NOVEL EXHIBIT OF THE DENVER AND RIO GRANDE AT THE PANAMA-PACIFIC INTERNATIONAL EXPOSITION.

thousand feet of space in one wing of the structure for such space as may be desired by other transportation companies, rail or steamer, and offices of this kind will be confined to this building. The convenience to exposition visitors of concentrating the transportation offices in this manner is obvious.

BOOK REVIEWS.

Statistical Atlas: 1914.—The Census Bureau at Washington has issued a statement to the effect that the Statistical Atlas of the United States soon will be ready for distribution. It is issued by William J. Harris, Director of the Bureau of the Census of the Department of Commerce. The Atlas is compiled primarily as a popular volume and will also prove of great value to educators and statisticians. The statistics of the Census Bureau are presented in a graphic manner, which renders them easy of comprehension and well adapted for use for lectures and technical studies of the various subjects presented in the census reports. As the edition is limited, these volumes can not be as freely distributed as other census publications.

The Atlas contains 99 pages of descriptive text and 503 pages comprising 698 maps and 278 diagrams, and includes comparative figures for many of the censuses from 1790 to 1910. The illustrations cover the subjects of population, agriculture, manufactures, mines and quarries, cotton, financial statistics of cities, vital statistics, religious bodies, marriage and divorce, and insane in hospitals. The text includes a short description of each of the maps and diagrams.

New Percentage Maps Published by Western Firm.—Wymond and Clark of Chicago, have recently published two new percentage maps showing east and west bound percentage groups in Central Freight Association contiguous territory. The price of these maps range from $5.00 to $10.00 according to style of mounting and binding.

The percentage groups are based on the New York-Chicago rate, the maps showing by percentages of this base rate the rates between C. F. A. and Eastern territories. An appendix accompanying the maps, gives the rules for the construction of the rates and tables to facilitate their computation.

The information contained in the maps and appendix is indispensable to a clear understanding of these rates, as they show not only the absolute rates between the territories named but the ADJUSTMENT of all points—a comprehensive view of the rates from any group as related to all other groups.

The rates between these territories are on the Percentage and Differential Basis and the maps illustrate in a very striking way the advantages of that system of rate making. As the percentages remain the same whatever the base rate may be, the value of the maps will not be affected by any change in base rate.

We are informed by the publishers, that the maps have come into general use in the associations of the railroads in the territories covered.

RESIGNATIONS.

Executive.

O. L. Dickeson, president, White Pass and Yukon Railroad.

Ivy L. Lee, executive assistant to President Rea, Pennsylvania Railroad.

E. W. McKenna, vice-president, Chicago, Milwaukee and St. Paul Railroad.

David McNicoll, vice-president, Canadian Pacific Railway.

Samuel C. Scotton, director, Chicago, Burlington and Quincy Railroad.

Benjamin Strong, Jr., director, Seaboard Air Line.

Frank A. Vanderlip, director, Seaboard Air Line.

P. A. B. Widener, director, Reading Company, the Philadelphia & Reading Railway and the Reading Coal & Iron Company.

Engineering and Mechanical.

J. W. Fogg, master mechanic, Baltimore and Ohio Railroad, Chicago Terminal Railroad.

F. J. Glover, electrical engineer, Rock Island Lines.

B. F. Harrison, roadmaster, Southern Division, Chicago, Rock Island and Gulf Railway.

A. G. Kantman, superintendent of machinery, Nashville, Chattanooga and St. Louis Railroad.

F. D. Nauman, division engineer, Chicago Division, Baltimore and Ohio Railroad.

J. H. Ruxton, master mechanic, San Antonio, Uvalde & Gulf Railroad.

Operation.

Roldin A. Brown, trainmaster, Illinois Central Railroad.

J. B. Paul, superintendent, Liberty-White Railroad.

Traffic.

W. R. Alberger, traffic manager, Tonopah and Tidewater Railroad.

S. J. Alexander, agent, Union Lines of the Pennsylvania Lines West of Pittsburgh and the Pennsylvania Railroad at Sioux City, Ia.

W. H. Clancy, city passenger and ticket agent, Grand Trunk Railroad.

H. C. Davis, general agent, Lehigh Valley Railroad.

H. L. Miller, general freight agent, Southern Railway.

T. F. Powell, division freight agent, Erie Railroad.

N. H. Reed, assistant general advertising agent, Atchison, Topeka and Santa Fe Ry.

A. C. Stutsman, district passenger agent, Cincinnati Northern Railroad.

William B. Wheeler, general western passenger agent, Lehigh Valley Railroad.

Miscellaneous.

Ross D. Synder, chief examiner, Interstate Commerce Commission.

W. F. Woerner, member, Missouri Public Service Commission.

ELECTIONS AND APPOINTMENTS.

Executive.

F. J. Bannister, vice-president, Shreveport, Alexandria and Southwestern Railway. Headquarters, Kansas City, Mo.

W. M. Baugh, assistant to receiver, Liberty-White Railroad. Headquarters, McComb, Miss.

E. W. Beatty, vice-president, Canadian Pacific Railway. Headquarters, Montreal, Que.

C. H. Buell, staff registrar, Canadian Pacific Railway. Headquarters, Montreal, Que.

George Bury, vice-president, Canadian Pacific Railroad. Headquarters, Montreal, Que.

F. M. B. Close, director, Seaboard Air Line Railroad.

M. T. Cogley, president, Texas Mexican Railway. Headquarters, Mexico City, Mexico.

John A. Cushing, vice-president, Mt. Tamalpais & Muir Woods Railway. Headquarters, Mill Valley, Cal.

J. E. Dalrymple, V. P. in charge of traffic, Montreal and Southern Counties Railroad.

R. S. Davis, second vice-president and general manager in charge of operation and traffic, Shreveport, Alexandria and Southwestern Railway. Headquarters, Kansas City, Mo.

Lyman Delano, third vice-president, Atlantic Coast Line Railroad. Headquarters, Wilmington, N. C.

E. Dickinson, director, Kansas City, Mexico & Orient Railroad

F. C. Elliot, president, White Pass and Yukon Route. Headquarters, Chicago, Ill.

Fairfax Harrison, president, American Highway Association.

W. R. Hudson, president of the Cincinnati Railroad Club.

O'Donnell Iselin, director, Buffalo, Rochester and Pittsburgh Railway.

Louis C. Krauthoff, director, Chicago & Alton Railroad.

R. A. Long, president, Shreveport, Alexandria and Southwestern Railway. Headquarters, Kansas City, Mo.

Samuel F. Manning, president, American Association of Traveling Passenger Agents.

Harry L. Miller, president, Interstate Railroad. Headquarters, Big Stone Gap, Virginia.

L. W. Page, vice-president, American Highway Association.

T. R. Ryan, sub and acting managing director, Brazil Railways and general superintendent, Sorocobana Railway Company. Headquarters, Sau Paulo, Brazil.

W. C. Savage, president, Mt. Tamalpais and Muir Woods Railway. Headquarters, Mill Valley, Cal.

Frederick C. Syze, president, New York Railroad Club.

J. D. Tennant, third vice-president, Shreveport, Alexandria and Southwestern Railway. Headquarters, Kansas City, Mo.

George S. Waid, vice-president and general manager, Sunset Central Lines of the Southern Pacific Company. Headquarters, Houston, Tex.

Roberts Walker, director, Chicago and Alton Railroad.

George W. Watts, director, Seaboard Air Line Railroad.

Joseph E. Widener, director, Philadelphia & Reading Railway and the Reading Coal & Iron Company.

Legal.

Frank Smith, attorney for the Interstate Commerce Commission in Illinois.

W. R. Thurmond, general counsel, Shreveport, Alexandria and Southwestern Railway System. Headquarters, Kansas City, Mo.

Financial.

R. T. Demsey, secretary, Shreveport, Alexandria and Southwestern Railway System. Headquarters, Kansas City, Mo.

Elliott T. Monnett, secretary-treasurer, American Association of Traveling Passenger Agents.

Accounting.

A. S. Dutton, auditor of freight accounts, Toronto, Hamilton and Buffalo Railway. Headquarters, Detroit, Mich.

A. Mackrille, general auditor, New York, New Haven & Hartford Railroad. Headquarters, New Haven, Conn.

T. M. Prentice, auditor, New York, New Haven & Hartford Railroad. Headquarters, New Haven, Conn.

P. C. Rickey, general auditor, Shreveport, Alexandria and Southwestern Railway System. Headquarters, Kansas City, Mo.

Engineering and Mechanical.

Milo M. Backus, roadmaster, Springfield Division, Illinois Central Railroad. Headquarters, Clinton, Ill.

Lewis H. Bond, roadmaster, St. Louis Division, Illinois Central Railroad. Headquarters, Carbondale, Ill.

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M. F. Clements, engineer in charge of track elevation, Northern Pacific. Headquarters, Spokane, Wash.

W. Gillespie, mechanical superintendent, Central Vermont Railroad. Headquarters, St. Albans, Vt.

John B. Glasgow, trainmaster, Northern Pacific Railway. Headquarters, Mandan, N. D.

S. E. Hutton, engineer, Public Utilities Commission of Idaho.

E. J. Langhurst, road foreman of engines, Baltimore and Ohio Railroad. Headquarters, Parkersburg, W. Va.

E. H. McCann, master mechanic, San Antonio, Uvalde and Gulf Railroad. Headquarters, Pleasanton, Texas.

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H. Buckingham, general manager, Mt. Tamalpais & Muir Woods Railway. Headquarters, Mill Valley, Cal.

S. W. DeWolf, general manager, Texas-Mexican Railway. Headquarters, Laredo, Texas.

E. O. Dunn, chief despatcher, 27th and 28th districts, Grand Trunk Railway. Headquarters, Durand, Mich.

J. S. Gillespie, acting general superintendent, Columbus and Southern Railway. Headquarters, Laurelville, Ohio.

R. C. Hobbs, general manager, Kansas City & Memphis Railway. Headquarters, Rogers, Ark.

M. C. Hughes, assistant superintendent, Beardstown Division, Chicago, Burlington and Quincy Railroad. Headquarters, Centralia, Ill.

Charles H. Hurdleston, manager, Texas State Railroad. Headquarters, Rusk, Texas.

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E. P. Laird, superintendent, Richmond District, Atlantic Coast Line. Headquarters, Richmond, Va.

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M. Lipman, supervisor, section 18, Conemaugh Division, Pennsylvania Railroad.

R. B. Mann, superintendent of terminals, Cincinnati, Hamilton and Dayton Railway. Headquarters, Cincinnati, Ohio.

L. L. Marshall, superintendent, Lake Erie, Franklin & Clarion Railroad. Headquarters, Clarion, Pa.

J. H. Nelson, superintendent, Paducah-Memphis Division, Nashville, Chattanooga and St. Louis Railway. Headquarters, Memphis, Tenn.

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N. P. North, trainmaster, Grand Trunk Railway. Headquarters, Durand, Mich.

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G. S. Waid, general manager, Sunset-Central Lines. Headquarters, Houston, Texas.

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H. J. Young, assistant general manager, Erie Dispatch. Headquarters, Chicago, Ill.

Traffic.

E. U. Baker, division freight agent, Erie Railroad. Headquarters, Meadville, Pa.

Herman H. Belz, agent, Union Line, Pennsylvania Lines West of Pittsburgh and the Pennsylvania Railroad. Headquarters, Sioux Falls, Iowa.

C. J. Burchfield, assistant general advertising agent, Atchison, Topeka and Santa Fe Railway. Headquarters, Chicago, Ill.

Samuel W. Carder, commercial agent, New York Central Fast Freight Lines. Headquarters, Omaha, Neb.

D. H. Cook, traffic manager and superintendent, Nevada Copper Belt Railroad. Headquarters, Mason, Nev.

J. M. Cousins, general agent, Wabash Railroad. Headquarters, New Orleans, La.

M. O. Dafoe, city passenger and ticket agent, Grand Trunk Railway. Headquarters, Montreal, Que.

Cole Danley, traveling passenger agent, Nashville, Chattanooga and St. Louis Railway and Western & Atlantic Railroad. Headquarters, Chattanooga, Tenn.

H. C. Davis, traveling passenger agent, Nashville, Chattanooga and St. Louis Railway and Western & Atlantic Railroad. Headquarters, Jacksonville, Fla.

J. M. Eedson, freight claim agent, Toronto, Hamilton and Buffalo Railroad. Headquarters, Detroit, Mich.

L. M. Foss, district freight and passenger ag ent, Oregon-Washington Railroad and Navigation Company. Headquarters, Lewiston, Idaho.

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William Gourlay, general traffic agent, Western Lines, American Express Company. Headquarters, Chicago, Ill.

Iverson L. Graves, general freight agent, Southern Railway. Headquarters, Knowville, Tenn.

F. G. Hamblin, traffic manager, Kansas City and Memphis Railway. Headquarters, Rogers, Ark.

George W. Hay, general passenger agent, Lehigh Valley Railroad. Headquarters, New York.

Thomas Henry, passenger traffic manager, Canadian Steamship Lines.

H. L. Hudson, district freight agent, Union Pacific. Headquarters, Seattle, Wash.

F. D. Hurst, division freight agent, New York Central Lines. Headquarters, Youngstown, O.

F. M. Jenifer, traffic manager, Tonopah and Tidewater Railroad.

G. H. Kerr, commercial agent, Southern Railway. Headquarters, Atlanta, Ga.

Charles E. King, agent, Erie Dispatch. Headquarters, St. Louis, Mo.

W. H. Leahy, traveling passenger agent, Nashville, Chattanooga and St. Louis Railway and Western & Atlantic Railroad. Headquarters, Atlanta, Ga.

Charles S. Lee, passenger traffic manager, Lehigh Valley Railroad. Headquarters, New York.

Forest Lindsey, western passenger agent, Lehigh Valley Railroad. Headquarters, Chicago, Ill.

John A. Miller, district freight and passenger agent, Great Northern Railway. Headquarters, Bellingham, Wash.

DIVIDEND NOTICES.

OFFICE OF THE UNITED GAS IMPROVEMENT CO.

N. W. corner Broad and Arch Streets.
Philadelphia, Dec. 9, 1914.

The Directors have this day declared a quarterly dividend of two per cent. ($1.00 per share), payable Jan. 15, 1915, to stockholders of record at the close of business Dec. 31, 1914. Checks will be mailed.

LEWIS LILLIE, Treasurer.

AMERICAN CAR AND FOUNDRY COMPANY.

New York December 3, 1914.
PREFERRED CAPITAL STOCK
DIVIDEND NO. 63

A dividend of one and three-quarters per cent. (1¾%) on the Preferred Stock of this Company has this day been declared, payable Friday, January 1, 1915, to stockholders of record at the close of business, Friday, December 11, 1914.

Checks will be mailed by the Guaranty Trust Company of New York.

WM. M. HAGER, Secretary.
S. S. DELANO, Treasurer.

AMERICAN CAR AND FOUNDRY COMPANY.

New York, December 3, 1914.
COMMON CAPITAL STOCK
DIVIDEND NO. 49

A dividend of one-half per cent. (½%) on the Common Stock of this Company has this day been declared, payable Friday, January 1, 1915, to stockholders of record at the close of business Friday, December 11, 1914.

Checks will be mailed by the Guaranty Trust Company of New York.

WM. M. HAGER, Secretary.
S. S. DELANO, Treasurer.

Statement for October, 1914, of the ownership, management, etc., of the "Railway World," published monthly at Philadelphia, Pa., required by the Act of August 24, 1913.

Editor,	Edward G. Ward,	Philadelphia, Pa.
Publisher,	"Railway World,"	Philadelphia, Pa.

Stockholders:

E. Gaskin,	Buffalo, N. Y.
M. A. Ward,	Brooklyn, N. Y.
Chas. M. King,	New York City.
Garrison M. King,	New York City.
B. C. Tucker,	Cleveland, Ohio.
C. C. McCain,	New York City.
C. S. McCain,	Maplewood, N. J.
W. J. Conners,	Buffalo, N. Y.
Harry Howarth,	Trenton, N. J.
Frank F. Henry,	Buffalo, N. Y.
Allen Waldbauer,	Pittsburgh, Pa.
J. H. Reed,	Pittsburgh, Pa.
James D. Callery,	Pittsburgh, Pa.
Edwin W. Smith,	Pittsburgh, Pa.

Bondholders:

Harper & Bro. Co.,	Philadelphia, Pa.
W. B. Jenkins,	New York.
J. F. Tucker, Est.,	Chicago, Ill.
F. C. Howlett, Est.,	Syracuse, N. Y.
H. C. Blye,	New York.
R. W. Baxter,	Seattle, Wash.
C. M. Heald,	Buffalo, N. Y.
E. T. Douglass,	Philadelphia, Pa.

(Signed) E. G. WARD,
Editor.

Sworn to and subscribed before me this 24th day of September, 1914.

(Signed) WALTER M. BARBER,
Notary Public.

(My commission expires February 21, 1915.)

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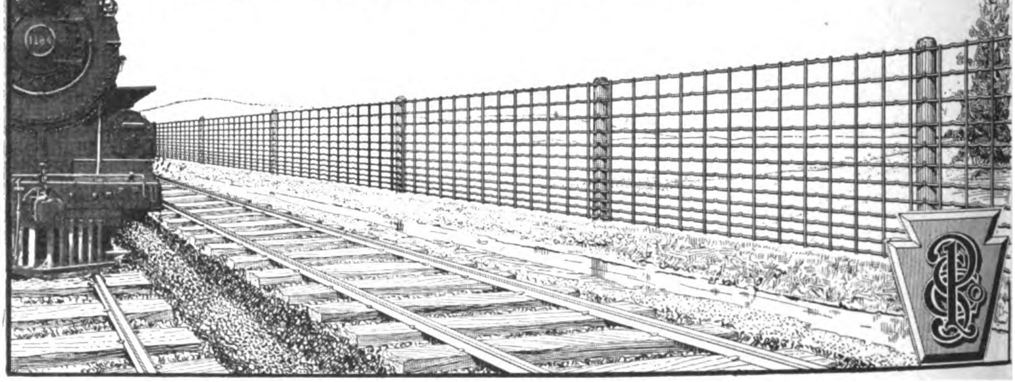

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RAILWAY WORLD

Transportation :: Commerce :: Finance

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Interstate Commerce Commission Grants Rate Increase

Annual Meeting of Railway Business Association

The Outlook as Viewed by Prominent Officials

The Safety of United States Railways

The Necessity for a Constructive Policy in the Practice of Public Regulation

The Parcel Post and Its Effect on Railway Revenues

The Handling of Snow and Care of Track in Winter

The Mechanical Side of Railroading

Railway Revenues and Expenses

Annual Report of the Interstate Commerce Commission

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Air Brake Education

No. 4. Who Should Study the Air Brake?

THE Westinghouse idea is that every railroad man should study the Air Brake.

The natural classification of any railroad organization, with reference to the Air Brake Education required, might be stated broadly as follows:

(a) Those who actually operate the air brake to control moving trains. The operating crews including engineers, firemen, brakemen, conductors, etc., are numerically, the largest class primarily interested in, and responsible for, skillful brake manipulation and train handling.

(b) Those who maintain, repair and test the air brake. Air brake foremen, repairmen, test rack operators, inspectors, etc. This class is small compared with trainmen and is primarily interested in the structural features and detailed operation of the individual devices.

(c) Those who lay out and make the installation. Mechanical engineers, chief draftsmen, car designers, car and locomotive builders, railroad inspectors, etc. These men are concerned most with matters of braking power, leverage, distribution of apparatus on the car or locomotive in relation to other devices, and similar work.

(d) Those in authority who supervise and instruct. Supervisors of air brakes, air brake instructors, road foremen of engines, etc. These officials should have a comprehensive knowledge of both the practical manipulation and the mechanical operation of the air brake system, its individual parts, and the principles upon which this operation is based.

(e) Those in executive capacity who are responsible for the most efficient and profitable management of the road. These officials, including boards of directors, should have a broad appreciation of the possibilities and performance of the air brake, and are vitally interested in the use of the best type of brake for a given service, establishing common standards, and encouraging every phase of air brake education.

This is the fourth of a series of papers covering a practical review of the essential elements of Air Brake Education.

Westinghouse Air Brake Company

Pittsburgh, Pa.

New York, City Investing Bldg. Chicago, Railway Investing Bldg. St. Louis, Security Bldg.

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Railway World

VOLUME LVIII ESTABLISHED 1856 NUMBER 12

A MONTHLY JOURNAL (successor to Railway World, a weekly publication) designed to present an accurate and comprehensive review of current events pertaining to Transportation, Commerce and Finance and to afford a medium for the development of a clearer understanding of the mutuality of interest which exists between those who employ and those who operate the railways.

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ALFRED EBERL . . . . . Secretary.

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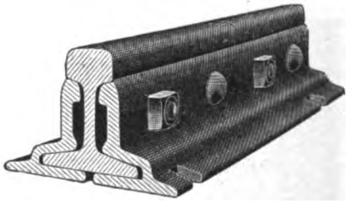

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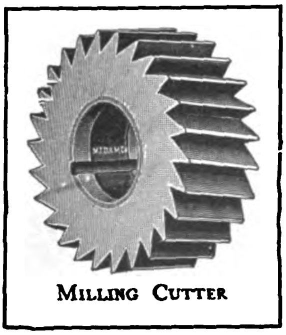

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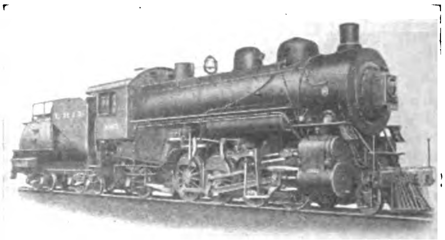

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